The Builder.

VOL. XVI.—No. 800.

The Struggling Classes.
Public Play-grounds.
The Penny Theatre.

MUCH credit is due to Mr. Slaney for continuous endeavours to improve the condition of the masses. Amongst his good works must be placed his Bill (without admitting all its details) to facilitate the grant of land near populous places for the regulated recreation of adults and as playgrounds for poor children;—notwithstanding that it was difficult to keep "a house" while he was moving for leave to bring it in. He pointed out that the changes which had taken place in various directions for the benefit of all other classes of society had operated to the injury of the labouring poor, by driving them to reside within a narrower area, and by not having reserved places for exercise and recreation. He had drawn the attention of the House of Commons to this twenty-five years ago, and had obtained a committee upon the question, and the report which that committee had made contained suggestions, many of which had been since adopted. We sincerely hope that the House will aid Mr. Slaney in his object. Wholesome recreation for adults is amongst the necessaries of life: and as to the poor *children* of London and other large towns, it is scarcely possible to over-estimate the degradation and money loss brought about by confining them to the wretched homes of their parents or the more wretched haunts of the thousands of town children who have no parents, or protectors to overlook them. You may often see children, dwellers in the close courts and alleys which in many cases adjoin our nicely planted squares, following the instincts of nature, creeping from the shadow to the fresher air and sunshine, and eagerly peeping through the enclosures at the shrubs and flowers, till driven back by stalwart street-keepers and policemen, when they scamper off to their dingy homes, where, in too many instances, evil and contamination await them. In confined streets the children are without the means of healthy amusement or of any chance of occupying their time and leading their thoughts in such a manner as would be likely to strengthen the body or cultivate the faculties. They cannot, like little George Stephenson, ramble to the "burn," and amuse themselves in constructing miniature water-mills, or dig clay from the bog and gather the stems of hemlocks and fashion the materials into engines. A rightly formed heart must ache for the poor boys of London, particularly when it is recollected what multitudes of them there are who are progressing towards manhood deteriorated and educated downwards. To many of them the glorious tints of the setting sun are a sight scarcely known, and to them the "rosy hue of incense breathing morn" must be as strange as the fresh green places in which children in the country have an opportunity of cheerfully spending their play-hours. Who has heard without delight the joyous voices and the rush into lanes and fields of the children of the village schools—how different from the dismissal from the schools of the poor in many parts of London—to many of whom a large dust-heap, the embankment made when opening a sewer, or some similar arena, is a treat of an extraordinary description. Priceless are the recollections of those green lanes and flowery banks in after days, as when,—

> "In vacant or in pensive mood,
> They flash upon that *inward eye*
> Which is the bliss of solitude."

Those who are acquainted with the subject know the evil which follows from allowing children to play in the streets. "What can we do?" say the parents: "it is natural for children who are in health to play, and how can they do so in their inconvenient room, without quarrels with the neighbours?" They must swarm into the streets, and risk the great dangers which await them. It is absolutely necessary that some means should be taken to remedy this evil, and afford the means of such healthy exercise as can be had in the midst of a large population. In order to show this, glance at the dense population which inhabits the district from St. Martin's-lane to Farringdon-street, and between Oxford-street and Holborn, and the Strand and Fleet-street, and notice what few breathing-places are left for the use of the many thousands who occupy that space. To those living in the western portion, St. James's-park and the space in front of the National Gallery are not at a great distance; but only few of the poorest avail themselves of those very public places; and many have remarked with wonder how small a number of children from pent-up places make use of the parks. This is to be partly accounted for by the circumstance that the ill-clad are often looked at with suspicion. Moreover, young children seldom stray far from home. The only other open spaces in this locality are Leicester-square, the centre of which is nearly covered by the Great Globe building; Covent-garden Market,—a space generally occupied; Clifford's-inn; Lincoln's-inn-fields; and Gray's-inn. In the latter there is a beautiful piece of ground, with large and venerable trees, which have an historical interest: and we venture to suggest that great benefit would be conferred by opening it to the public, as the authorities of the Temple have opened their garden, which is the only other uncovered space in this district worthy of notice. To the latter place in the summer evenings, thousands of the wives and children of the working classes living around have resorted; and it is worthy of notice that the most orderly conduct has been observed, and no damage has been done, although so many children have been admitted, to either the grass or flowers. In the week-days, during both winter and summer, any persons tidily dressed, with or without children, are admitted, and none have complained of noise or inconvenience. This ought to be an encouragement to the members of the other Inns to follow the example which has been set them by the Templars. Would it not be useful to try a similar experiment inside the railings in the centre of Lincoln's-inn-fields?

In connection with some of the metropolitan schools in the more open parts of London, space has been reserved as playgrounds for the scholars, some of which are fitted up with poles for gymnastic exercise. In the parish of St. Clement Danes, which is thickly built upon, substantial school-rooms have been erected in Milford-lane. There was, however, no ground to spare for a playground, but a sort of cage has been ingeniously thrown over the flat roof, which affords a safe and airy flat for the children to play on.

The play-ground of Christ's School is, for the City, large and convenient; so is that of the Charter-house. Both these, however, want the gymnastic apparatus which has been so well fitted up in the grounds of University College.

In the Regent's-park, near the south base of Primrose-hill, a gymnasium some time since was opened, and this we have seen in the summer time crowded by youths and boys. A person who seems to have been an old soldier acted as superintendent: before dark the ropes and poles were taken down, and the company soon dispersed. Similar arrangements might be made in Hyde and the other parks. What seems, however, to be wanted, in addition to the matters already mentioned, are little plots of ground for public play-grounds, at convenient intervals, in the midst of our densest population; and a society, whose offices are at No. 17, Bull-and-Mouth-street, St. Martin's-le-Grand, has been formed to carry out this laudable object. The idea is worthy of all praise, although we are reluctantly forced to confess that in those localities in which such institutions are most needed, there will be some difficulties to encounter, such as the great value of ground, and the objection which arises to the noise. As children grow up, other means of recreation should be made available. Any one who would devise a system of attractive, cheap, and innocent amusements for the poor, would further the cause of morality. All classes must have recreation. "Recreation," says Bishop Hall, "is intended to the mind, as whetting is to the scythe, to sharpen the edge of it, which otherwise would grow dull and blunt. He, therefore, that spends his whole time in recreation, is ever whetting, never mowing; his grass may grow and his steed may starve: as, contrarily, he that always toils and never recreates, is ever mowing, never whetting: labouring much to little purpose."

It is related that when Tahiti first came under European influence, the missionaries, from pure but mistaken motives, interdicted all the native amusements. They made dancing, foot-racing, and athletic games punishable offences, and prohibited every species of national pastime, from the holding of floral festivals to the singing of traditional ballads. To the effects of this policy a recent traveller bears mournful testimony. He tells us that, "supplied with no amusements in the place of those forbidden, the Tahitians have sunk into a state of listlessness, and indulge in sensualities a hundred times more pernicious than all the games ever celebrated in the temple of Tanee." *

The ignorant condition of thousands of both sexes in London, notwithstanding what has been done by ragged schools lately, is frightful to contemplate. They see the sky above their heads, but have no notion of its composition; the rain falls, but they know not the cause; the bread they eat, the coal that warms them, and the dingy brickwork of their courts and streets, conveys no idea to them beyond what is presented to their untaught eyes. Their mind cannot wander to the waving corn-fields, or to the sources of the production of the familiar things by which they are surrounded. Of the simplest religious truths and moral principles, they know nothing. It may seem to some that we are making an overcoloured statement, but those connected with the police-courts of the metropolis, know well the numerous cases which are brought before their notice of children from ten to twelve years of age, or more, who are not capable of taking an oath, in consequence of want of understanding; and those who have

* Sawyer's Essay on "Popular Amusements."

visited the poor districts of London can form a further idea of the extent of this evil.

It is evident that this absence of knowledge is in a great measure the result of the want of opportunity; for although, in some instances, bad air and other evils have created a dull and morbid temperament even in the young, it cannot fail to be noticed by all who have studied the subject, that the desire in these poor neighbourhoods for knowledge of some kind is remarkable, and as the right kind does not present itself, it is not surprising to see with what activity they set about a description of education they would be much better without. The human mind in varied degrees must find something to occupy itself with, and if good cannot be had, it rushes to the bad.

It is a curious sight to notice groups of young boys, of from seven to nine years of age, engaged, with all the earnestness of mature years, in games of chance,—such as dice, pitch and toss, and even cards; smoking short pipes, and betting in a manner which would seem to show an instinctive knowledge of counting, although they know neither a letter of the alphabet nor the figures of arithmetic. But the eagerness and rapt attention here seen are as nothing compared with what is apparent at *a penny theatre*, the chief means of education to large bodies of boys and girls who will be men and women, and form part of the community. Much evil arises from these resorts; nevertheless, we have a strong conviction that they are calculated to do more good than harm, and that it is not so desirable to interdict as to improve them, and render them a means of satisfying innocently that yearning for mental food to which we have alluded. The real nature of these places is little understood: but those who would suggest adequate remedies for the social evils which exist amongst a very large number of the long neglected classes of our population, must thoroughly investigate and understand existing circumstances. A year ago, the performances at penny theatres consisted of singing, dancing, and a short piece, generally of a melodramatic kind; or, in the season, a sort of pantomime: in some instances, the words of the songs were broad and improper. Since then, however, the police have overlooked them; many have been closed; all attempts at what may be called theatrical exhibitions have been stopped; and the amusement offered now consists chiefly of the singing of the popular street songs and negro melodies in characteristic costumes. Dancing of the most vigorous description is highly relished, as also are feats of strength, legerdemain, &c.; and it is remarkable how great an attraction chemical experiments have. The exhibition of laughing-gas, galvanism, &c. has been, and still is, a standard portion of these exhibitions. The matter which we have taken the pains lately to see at these places, although not instructive, had not of itself any immoral tendency.

The point we have in view is to show the eagerness with which this sort of *education* is taken advantage of, and that it is in truth the only sort of instruction to which many can attend. The apartment is full, and the appearance, seen from the stage, very striking. Here are infants in the arms of mothers who have scarcely passed the years of girlhood; the "two years' child," with staring eyes and open mouth, looking with wondrous intentness on the scene passing on the small ill-decorated stage: mixed in the group are boys of elder growth, and a few very young girls; there are, besides, youths of from sixteen to twenty, dressed in as nearly as possible the same style, viz.: short coats of velveteen, or some other stout material, cord trowsers, caps, and showy neck-ties. The younger boys imitate as closely as may be the fashion of their elders, although some are but ragged copies. We saw few on any occasion who seemed over twenty years of age, excepting one or two broken-down old men, who strangely contrasted with those surrounding.

At the risk of startling some of our readers, we have engraved an admirable drawing made for us by Mr. James Godwin,—not "fancy's sketch," but a true record. As we are not seeking to advertise these places, but to lead to their improvement, we need not give the locality of the structure. The first "house" was just over: we counted out 680 boys and girls, many of the worst possible character; and there were nearly as many waiting, who went in immediately after. A third representation was to follow, and complete the night. The engraving shows the boxes (2d.), and part of the back row of the pit (1d.). We saw no impropriety then, or on any other occasion, and could find no greater difference between that place and Astley's than there is between Astley's and the Italian Opera-House. Of course, gazing at this youthful crowd, it is impossible to ignore the danger and mischief which lie beneath; and it is saddening to reflect that this is only a small sample of some thousands scattered here and there over the metropolis, and who, in a great measure, have been reared in neglect. The peculiar education (if we may so call it) of this class requires unusual measures, and it may be observed that, although, under the circumstances, books are useless, yet paintings, music, and exhibitions which place a tale of interest before the eye meet with ready appreciation, and in the absence of the power of deriving amusement from books, we are inclined to think that the penny theatres, as now managed, do more good than harm, and that they might be very greatly improved, not only with advantage to the owners of them, but also to the visitors. Some of our readers will recollect Dr. Livingstone's observation, that the views afforded by the magic-lantern were the only kind of knowledge he was asked twice for by the Africans.

It has been objected to these exhibitions that they bring large numbers of dangerous characters together, and expose the younger part to the bad instruction of the elder. The same objection was made to the Ragged Schools at their commencement, but does not seem to hold good.

In the neighbourhood of Whitechapel there are various exhibitions which are resorted to by crowds of the same description as visit the penny theatres: these are of an artistic nature: they consist of views of places and incidents connected with the late war, and other stirring events, which are shown by panoramas and dissolving views. Views in the Holy Land and places connected with the sacred Scriptures are very popular. These humble art-exhibitions are highly spoken of by experienced City missionaries; and we are told that such considerable sums of money are raised by the speculators that they are enabled to effect great improvements, and that the people are becoming more critical. These exhibitions for the poor ought to receive encouragement, the pictures and the short lecture being the only books many can understand.

The cheap concerts and balls held in public-houses which are licensed for music are more mischievous than the places to which we have alluded. It would be well if rooms unattached to such places could be formed for the purpose of having well arranged and popular concerts at a small cost; and no doubt illustrated lectures on subjects of common interest would be well attended, and these would be a means in some measure of connecting the darkness which feels pleasure only in sensual amusements with the light of more advanced intellectual recreations.

When, however, such groups as those at present under consideration are seen, when we view them hovering around the outskirts of crowds, or assembled together in friendly groups in the Borough and elsewhere, or coming forth in thousands at executions or in times of tumult, the prospect of effecting much real good in this sturdy and dangerous army seems small; but the greater is the necessity of preventing the young and the yet unborn from growing up in large numbers to recruit this force which is now arrayed against honest industry and order.

We must encourage the erection of Social Bridges, however small, which lead in a right direction, and amongst these are public playgrounds for children, and innocent recreations for adults. All should remember that,—"When God gives a blessing to be enjoyed, he gives it with a duty to be done; and the duty of the happy is, to help the suffering to bear their woe."

THE RISING GENERATION TAKING THEIR LESSONS.

A Penny Theatre in London.

THE REPORT ON DISTRIBUTION OF THE SEWAGE OF TOWNS.

THE responsibility belonging to every expression of our opinion on the question of sewerage, we feel, expands as the evils in London and other towns increase, and with every fresh publication of other opinions on the subject. The documentary matter—the several direct assertions, and the "conclusions" of all kinds,—are embarrassing from their contradictory character,—and we may add, the doubt in which, to this moment, they leave some of the primary elements of the question. So far, if we have ourselves been unable to attempt to solve the difficulty, we have been able to offer to our readers of late, views, as to the different statements and propositions, which it is now clear were not inopportunely expressed. The grounds of the difficulty we had in any approval of the scheme of the Government Referees, or even of that of the Board of Works, which was in some respects more skilfully devised,—to wit, objections on the score of decomposition, to long distance of outfall and to great bulk and concentration of sewage in the arterial sewers and outfall channels; the *prominent* importance of the ventilation question in such a system, and the obligation which really belonged to the scheme, of taking into consideration an area larger even than the extended one proposed; the fresh conditions encountered by every approach to the coast, in the saline admixture; the impossibility of accepting a system as the conclusive and satisfactory one, under the great doubt of its applicability elsewhere, as in the instance of the northern towns; the claims of the lime process of precipitation to some attention, and yet the fallacy of looking for complete results therefrom; and the claims of sewage irrigation to further examination,—such points, which we dwelt upon, have been perceived and admitted in every later portion of the inquiry, though all questions comprised are not yet solved.

The actual position of the subject appears to be this. The principle of main intercepting drainage, with distant outfalls, in the mind of the ratepayer is *not proven*. The very legislature is almost hesitating about a question whether the sections 135 and 136, c. 120, of the Metropolis Local Management Act, were rightly passed; and it is obvious that their amendment will be necessary on the ground alone of impossibility of deciding upon and completing any works "for preventing all or any part of the sewage within the metropolis from flowing or passing into the river Thames," prior to "the 31st day of December, 1860." But the idea of ever *literally* complying with this provision, seems to be given up on all sides. Some question the whole of the conclusions as to the sewage in the river, excepting as to effect of the mud-banks; the latest report (to the Treasury mentioned in our recent numbers, and to be further noticed here) recognises a like view, so far as contemplating the discharge into the river of the bulk of the sewage, or supernatant liquid after precipitation, and apparently accepts it to such extent, as a principle capable of being applied to other towns, and albeit after having alluded to the use of river water (as that of the Thames) for drinking, and spoken of "the very idea that any population should be compelled to resort to such sources" as those which are at present used for the London supply, as "revolting in the extreme," and having said that—granting the mitigation of the evil by "natural causes," such as "the influence of the air, aquatic vegetation, fish, &c. which materially diminish the quantity of offensive matters"—"as a matter of common sense and public decency, it is not to be tolerated that the sewage of one town shall flow through, and still less be the water-source of another;" whilst Mr. Goldsworthy Gurney, in his report "to the First Commissioner of Works, on the state of the Thames in the neighbourhood of the Houses of Parliament"—after having done service in showing how the tendency is, of the sewage, to return with the tide and be deposited on the present banks to a degree far beyond what had before been demonstrated,—as we mentioned in a former article,* goes so far as to say, that if measures which he had recommended, were undertaken, a "question would probably arise as to whether any drainage of London beyond the natural outcast power of the river would ever be required." As a committee will have to report on Mr. Gurney's proposals very shortly, we need not anticipate their conclusions. It seems, however, that—with varying importance attached to embankment of the river, and to other measures as affecting the purification—outfall into the Thames within the metropolitan area, is now one of the propositions to be named as under consideration.

It cannot fairly be imputed to the ratepayers that they have taken an improper view of the main intercepting drainage with distant outfalls, considering the doubtful claims of even the best-considered of the schemes. These schemes, it may be well to remark, are based on one particular principle, taken as granted,—namely, one shadowed forth in the wording, though not involved in the intention, of the sections before named of the Local Management Act,—a principle which we do not say or believe is incorrect, but which dates from the opposition raised not many years ago, to the pollution of the Thames, when statements such as those of the last few months,—which it is, at least fair to give a hearing to,—had not been made, and from a time when the methods of disposal of sewage matter such as are now effectively carried out, had either not been undertaken, or were not generally known out of their immediate localities. To the former of these circumstances, we simply remark, is due the *predominant* attention given to main intercepting drainage (which has its proper value as an auxiliary), and the want of many necessary *data*, from actual experiment, in sewage utilization. Acts of Parliament, however, are sometimes passed with too hasty assumption of principles, as in the case of the Water Supply Act,—if the views on that branch of the sanitary question expressed at the time were correct, and if there be any kind of reason for the remarks which have been already quoted as to the sources of supply;—as it might now turn out that *a certain portion* of the sewage could be ejected into the Thames within the metropolis, without danger. We may observe further, that the assumption of a principle by the Referees (Captain Galton, and Messrs. Simpson and Blackwell) involved the rejection of very many valuable suggestions that might now deserve reconsideration, not to mention also other schemes set forth in the plans which were sent in to the Metropolitan Commissioners in the year 1849. The latter were classified by Messrs. Bazalgette and Cresy, according to the outfall proposed, under two main heads,—1. "The Thames;" and 2. "The Country." Under each of these, proposals for utilization and application were, it appears, included. Again, the recent report to the Metropolitan Board of Works—had its authors been free from the obligation imposed on them by the Act—would, no doubt, have favoured an outfall within the metropolitan boundary into the Thames, or works for precipitation in a similar locality, or both arrangements. The question, therefore, as to the outfall and disposal of London sewage, has assumed the position of of requiring the selection of one of three general principles,—(1.) the admission *to some extent* of the use of the Thames as a receptacle for sewage, or supernatant liquid after precipitation; (2) separation of the solid matter of sewage by chemical or mechanical means, on the supposition that the liquid could be got rid of without use of the Thames; and (3) direct application of the whole sewage to the land, by irrigation.

At this juncture appears the Report of the Royal Commission, addressed to the Treasury, dated 26th March, 1858. It is not easy to say what exact importance should be given to it. It comes to "conclusions," but these not very different from such as we were previously able to form, and it leaves the *data* mainly as they were before. Considerably more information is to be procured from the Appendices to the report of the Referees, the report to the Board of Health by Mr. H. Austin, one of the Commissioners, and from other sources;—information, however, which is given, in the report on the irrigation by sewage at Milan, had been wanting. It may, therefore, be well that we should attach more importance than the Commissioners themselves have expressed, to the particular character of this as a "*Preliminary* Report." The report professes to supply results of examinations of different works of sewage utilization, arrived at by frequent deliberations, "leaving it to a later period to institute practical trials of the methods that have already been proposed for the treatment of sewage, and of other processes which might possibly present themselves in the course of such an inquiry." Preliminary, however, in a full sense, or not, the report has attached to it the "Outline of a Plan for dealing with the Sewage of the Metropolis," which it has been stated has been carefully considered, and which certainly bears about it the aspect of a *conclusive* recommendation, as much as any other scheme that is before the public. We have already stated what are the main features,* but should now add that its special character consists in admission of the precipitation-process as an agent which may be employed even within the area of towns, without injury to the surrounding neighbourhood; in the view of the subsequent conditions of the liquid itself, or the *status* of the river, as allowing the portion of the sewage referred to, to be ejected without injurious results, and therefore permitting such an arrangement, at all events temporarily, and in the assumption that there will be the means of getting rid of the precipitate by the use of methods supposed to be free from the objections as well of a commercial as of a sanitary nature, that have been found at Leicester and other places. These methods consist in the discharge or conveyance of the "sludge" (or precipitated sewage and liquid) by pipes to the country, instead of attempting to get a dry product. Expense and nuisance at one end of the pipeage are supposed to be thus saved; and, at the other end, it is thought that the *sludge* could be distributed in the manner of irrigation, but without the difficulty apprehended in the other form, or the direct irrigation, of the requirement of an enormous quantity of land ready to receive the sewage. Of course, were the larger area of land happily found, the irrigation could then be conducted on the principle to which there are so many reasons for giving preference.

We have not alluded to that part of the "plan" which is connected with the construction of an embankment, although admitting that such a measure for preventing the formation of the mud-banks has the greatest importance in connection with the sewerage question. A communication along the banks of the river, vastly important as this has become, and architectural improvement which would be served by it, however, must not be allowed to influence the choice of outfall for the sewage. The latter object is too important in itself to bear being warped by any consideration whatever of a different kind: if two objects can be combined,—well—as money will be saved that way; but the judgment must be formed without bias. Indeed, there are those who believe that embankment would be destructive, not merely to the interests of the wharfingers, but to the *régime* of the river and to the navigation. Surely that question is one which there are sufficient materials for deciding, in the blue books long since issued, and in what is known to geologists of the operations of nature in estuaries and rivers. We prefer here to leave it for some separate notice.

Considering the decided claims, advanced at every recent inquiry, and fortified by this report, of the application of sewage by irrigation, it is to be regretted that points which most needed investigation, in that branch of the subject, are left in obscurity. In our notice last year of the Referees' report,* we thought even then that evidence, as afforded in the Appendices, and in the report of Mr. Austin, tended to show that where towns were situated favourably as to surrounding levels of land, the method of application by irrigation might be made to succeed,—if not returning interest of money, as the system had done largely in many cases, at least by affording the needed outfall, without disadvantage sanitarily. This much, indeed, the Commissioners admit. The question, we said, was,—could there be obtained near London, ground over which the great and increasing volume of sewage water could be made to flow; and could such irrigation be carried on in all seasons, and under all circumstances, or in some manner to avoid the objections to storage, and the expense of supplementary outfall? Not only the question of levels is involved, but the agricultural one of the quantity of sewage capable of being absorbed by particular soils beneficially, as well as that of the right application of land-drainage as necessary to the system of irrigation. Grass appears to be the only kind of produce to which constant or frequent irrigation would be suited. The system viewed theoretically, is one that effects deodorization, does not allow of stagnation or malaria, and allows the object to be attained on which some authorities dwell so much, of the return of water which had been first drawn from the river to the same course, and returning it even in a state of greater purity.

"The large water-supply and area of rainfall in the metropolis, and the different conditions as to sewage and rainfall of the urban and suburban districts," we admitted, occasioned difficulties; whilst "drainage of the marshes," was alluded to as itself a desirable thing for the health of London, and possibly necessary to their being in a condition to form, as it were, a market for the sewage. The marsh-drainage, with the objects named, was suggested to the Referees by Mr. J. Bailey Denton. His opinion, however, in the

* See page 254, *ante*,—"Main Drainage of the Metropolis: the report of Messrs. Bidder, Hawksley, and Bazalgette."

* See page 329, *ante*.

* Vol. xv. page 590.

special case, we have since heard contested by persons well acquainted with the districts. Probably the difference is not one that affects general principles; and land-drainage may be only unfitted to work with the system of irrigation, so to speak, as it now acts there, by capillary attraction, —the body of water being confined to ditches.

However the circumstances may be as to such localities, we regret that inquiry could not be pursued by the Commissioners as to whether there might not be obtainable, there or elsewhere, the grass land in sufficient quantity, and suited to receive the sewage of London. On the one hand, the facts at places like Edinburgh, where the irrigation is in use, are more valuable for the solution of the difficulty in London, than is generally apprehended; on the other hand, many questions present themselves that we could wish were answered, as to agricultural value of the *irrigation* as proposed, by sludge,—the worth of such manure itself, and the possibility of applying it economically to the roots of the grass,—and as to the effect which there might be on public health by exposure of the one form of manure in contradistinction to the rapid absorption of the constituents in the other form, in irrigation. It is this latter branch of the question which should have been investigated further. We shall have to return to it when we complete our notice of the Commissioners' Report.

THE FOOD COLLECTION IN THE BROMPTON MUSEUM.

A COMPREHENSIVE Food Museum is in course of formation at the Brompton Museum, partly to replace the collection originated by Mr. Twining, and since removed to the Polytechnic Institution in Regent-street. A very interesting feature in the Brompton Food Museum consists in the chemical analysis of various articles of food, such as wheat, oats, rice, potatoes, tea, cocoa, &c.—the results of the analyses being all displayed side by side, so that at a glance the various organic constituents or proximate elements of all the most usual and interesting articles of food may be seen and made acquaintance with by all, and something like a fixed and definite idea turn up in the mind ever after, when the gluten of wheat, the starch of potatoes, the theine of tea, &c. &c. are either read of or spoken of. For these chemical analyses and arrangements the public are indebted to Dr. Lyon Playfair, who has given not only the constituents but their relative quantities, together with tables and labels wherein the relative proportions of the heat-producing, flesh-producing, and other ingredients, in the principal articles of food, can readily be arrived at.

Thus, from a large tabular arrangement in colours, the relative quantity of flesh-yielding material in wheat, oats, rice, potatoes, and even tea, cocoa, and many other articles, may be at once seen. And it is interesting, as well as curious, to note the fact that there is actually much more of the flesh-forming material in dry tea than in potatoes, barley, maize, or even wheat, as a whole, but much more in pulse, or peas, beans, and lentils, than in *any other* kind of vegetable food. The quantity in potatoes is very small, indeed, compared with any of these. On the other hand, there is a great deal of heat-giving material in rice, as well as in wheat, but only half the flesh-yielding quality in rice that there is in dry tea. This heat-giving quality of rice is remarkable, when it is considered that rice is the chief article of food amongst the natives of India, who in general live in a climate where there is abundance, one would think, of heat, without the administration of it inwardly. The thin, spare, lean forms of many of the Indians, however, may partly depend on the fact that rice is by no means a distinguished flesh-yielder. The flesh-yielding qualities of all the pulse—or bean, pea, and lentil—family are very notable, but by no means a modern discovery. If Esau paid dearly for his mess of pottage, he had at least the advantage of a bowlful of the very best vegetable food for the support of his fleshy, hairy, body; inasmuch as Esau's "red pottage" was made of "lentils," as appears from Genesis xxv. 30, 34. Listen, too, ye patronizers of the "Arabic" Revelanta — Relevanta — Ervelanta — and all the other change-ringing in the pulse—the pea, bean, and lentil—line, to the words of Daniel on this special subject :—"Prove thy servants, I beseech thee, ten days; and let them give us pulse to eat and water to drink: then let our countenances be looked upon before thee, and the countenance of the children that eat of the portion of the king's meat. . . . . And at the end of ten days their countenances appeared fairer and *fatter in* FLESH than all the children which did eat the portion of the king's meat. Thus Melzar took away the portion of the meat and the wine that they should drink and gave them pulse." And thus, too, pulse appears to be "a dainty dish" not only fit "to set before a king," but better than all the king's meat and all the king's wine! And, moreover, with reference to modern chemical analysis and its results, so far as regards this precise description of food, and considering the difference between heat-giving, which, in fact, is a sort of fat-yielding material, and actual solid *flesh*-yielding substance, how peculiarly and strictly, and even chemically, correct is the expression, "fatter in flesh," when the *flesh*-yielding, rather than merely *fat*-yielding quality of the food is considered!

In one of the series of Dr. Playfair's cases there is an interesting collection of food ingredients illustrative of the flesh-yielding, heat-producing, and other properties of the food dispensed to our soldiers and sailors in active service, and again in their retirement at Chelsea and Greenwich; as also similar collections with respect to the food of the boys at the Royal Naval School at Greenwich, the Christ Church Hospital boys, the old maids in Gillespie's Hospital at Edinburgh, and the paupers in the workhouses throughout the country. There are large collections of specimens of all sorts of corn and other crops; a curious collection of teas; great varieties of fruits, and other articles far too numerous to mention; the whole forming a complete study in itself, and one which seems already to excite a special interest among the every-day visitors to the Brompton Museum.

Before concluding our present hasty notes, by the way, we may refer to what we had occasion not long since to say in regard to the use of oatmeal as an article of food in England, while noticing one of Mr. Twining's little publications as to the first food collection, which was entirely originated by that gentleman. The healthfulness of oatmeal as an article of food, even in England, may be instanced by its use in the Caledonian Asylum at Holloway. All the children in this excellent institution, girls as well as boys, breakfast every day (or used to do so at least, and doubtless still do) on "cogs" of oatmeal "porridge" (with milk) made in the old Scottish fashion of their forefathers; and a more healthful and comely collection of children are not often seen than the Caledonian Asylum children.

There is another valuable article of food to which we also before drew attention, namely Indian corn or maize, and which we would again allude to, in order merely to remark that it is worth while for any visitor to the Brompton Museum, interested in the subject of cheap and good food for the poor, just to look at the pure and really beautiful flour made from this article, and placed in one of the cases. Compared with the best wheaten flour, which may also be seen there, all the brilliancy of whiteness is in favour of the Indian corn flour: it is almost as white as the flour of fine starch. Its yellow meal and other forms and varieties may also be seen in the food collection at the Museum.

THE ART-QUESTION OF THE SECOND COMMANDMENT.

THE question set forth by your correspondent "Anglican" (putting aside the manner in which it is enunciated) is one which may be worthy of at least an explanation of the grounds upon which I made the statement which is contradicted.

The Mosaic moral law, in its ancient and proper form, was not ten commandments, but two tables. First, there was the law of duty towards God; secondly, that of duty towards fellow-men. A greater than Moses points out this principle in so many words. The first table, then, opens thus: "I Jehovah thy God which have brought thee out of the land of Egypt out of the house of bondage thou shalt have no other Gods before me thou shalt not make unto thee any graven image or any likeness that is in heaven above or that is in the earth beneath or that is in the water under the earth thou shalt not bow down thyself to them nor serve them for I Jehovah thy God am a jealous God." *

I did not lay it down as an important point in my history, but I suggested it as an interesting one, that here the very act of making an effigy, the first basis of the art of delineation, is advisedly forbidden.

The prophet Ezekiel, at a later period, gives the following vivid picture of idolatry: "And he said unto me Go in and behold the wicked abominations that they do here. So I went in and saw and behold every form of creeping things and abominable beasts and all the idols of the house of Israel pourtrayed upon the wall round about:" and seventy men of Israel "with every man his censer in his hand." Also, "He brought me into the inner court of Jehovah's house and behold about five and twenty men with their faces toward the east and they worshipped the sun toward the east."

Here we have indicated the two great generic forms of idol worship; namely, first, the employment of natural objects or their representations as the symbols of the abstract attributes of Providence unseen; secondly, the adoration of the heavenly bodies as themselves the visible presentment of Providence beyond. To the first form belonged the worship of Egypt.

In our familiarity with Egyptian works of later periods we must not forget that at the very early date of the Exodus of Israel delineative art was in an almost incomprehensibly primitive condition. It is not probable, I believe, that we possess any remains whatever of that very early period. Drawing on the flat was most likely unknown except in the preliminary invention of hieroglyphic record; and carving in the solid was itself an art of the very simplest, crudest, rudest kind imaginable, consisting merely in the manufacture of *teraphim*, the "graven images" of the Mosaic language. These objects were small statuettes of clay, wood, stone, or metal. (Such, of an advanced kind, were the Lares and Penates of the Romans, and such at the present day are the well-known household gods of India and China.) They were moulded or carved (graven) in a very primitive approximation to human or animal forms; and it is quite certain, I believe, that this effort of ingenuity was animated, not by any idea of fine art or even representation *per se*, but by an idea of *god-making*, and nothing else. The earliest household gods we imagine to have been meteoric stones ungraven, and the first act of sculptural art the correction of their accidental forms into a more distinct representment of their character as messengers from heaven. From this the transition was easy to the actual manufacture of the rude statuettes I have spoken of, and this in large numbers. Thus the land of Egypt was "filled with idols;" long before there were any temples or sculptured figures of public gods, every man had his own little "graven image" set up in his tent or hut, or perhaps carried in his bosom, to watch over the welfare of himself alone.

It seems uncertain how far the Israelites in Goshen followed this practice of their masters; but it was out of this state of affairs in Egypt that Moses led the children of Israel forth—a very simple, uncultivated people in the mass,—heart-humbled by the lash of slavery, unreasoning, ignorant, uninquiring, stubborn, stolid—"a stiff-necked people" of the most primitive associations.

He carried them into the solitude of the wilderness, and there propounded the mighty principle of spiritual monotheism afterwards expressed in the maxim, "God is *a spirit* and they that worship him must worship him *in spirit*."

The great *practical* obstacle to the establishment of this principle was manifestly the dogmatic use of these teraphim,—the orthodoxy of the day. It may seem to modern theologians of a certain school a very undignified thing that a commandment of the moral law should be levelled against a practice so insignificant as this; but, on the contrary, I think it was as important in that day as our own most important principles are now, that Jehovah the Spirit should not become a deity of teraphim. These images must therefore be denounced. But how? Shall the *worship* of these images be forbidden? No; the *making* of them, the possession of them, the existence of them, must be prohibited. It would be manifestly vain with such a people to forbid the worship of the gods which they were not forbidden to make. The intention of worshipping (so to call it) was the sole idea involved in the act of making. The principle of the time so far was, not so much, perhaps, that a god was an image, but that an image was a god. "Cursed the man that maketh graven or molten image;" the priest was therefore ordained to say, "an abomination unto Jehovah!"

Look at the incident of Aaron and his golden calf, which took place at the very period of the giving of the law,—a few days before. Moses was lost sight of in the clouded mountain. The people were in consternation. The mouth-piece of Jehovah their God, the oracle, the divine representative, was lost. There was only one course open to their intelligence. While Jehovah the Spirit was present in the mouth of Moses,

* In quoting the Bible as historical evidence we must omit the punctuation, the division into verses, and the italic or parenthetical words. I need not say that the word LORD in our translation marks "Jehovah" in the original.

they were comparatively at ease; thus far the great lawgiver had succeeded in setting aside their old orthodoxy. But when they awoke to the dreadful consideration that they had *lost* him, their old associations returned, in the only possible form. They had lost Moses, and with him their God: they went to the priest; it was his function to provide them with another. In fact, the very principle of monotheism was lost to view immediately. "Up, make us *gods!*" they cried. And Aaron was equally at fault. Moses alone understood the point,—*in all the world, perhaps, Moses alone!* Aaron called for gold. "I cast it into the fire," he said, "and there came out this calf." He graved it into better form, as was usual, and it was an orthodox god. It is an error to suppose that the act of the people here was a returning to Egyptian or other false gods. The sin was the returning to *teraphim*. Aaron was making, not an *Apis*, or a *Baal*, but (as he would no doubt have said) *a Jehovah*. "And when Aaron saw it he built an altar before it and Aaron made proclamation and said To-morrow a feast to Jehovah!"

We thus see how hard a task Moses had to perform in overthrowing the practice of making graven images. In fact, not only was it unsafe to countenance the simple idea of sculptural art, but architectural decoration also had to be discouraged lest even that should become a source of idolatry. "An altar of earth thou shalt make unto me—and if thou wilt make me an altar of stone thou shalt not build it of hewn stone for if thou lift up thy tool upon it thou hast polluted it." The very tooled stones would have become teraphim in the estimation of those simple people.

What, then, of the cherubim? The mercy-seat in the holy of holies was overshadowed by cherubim. That these were (as "Anglican" says) "two figures whose wings extended inwards and formed a sort of cradle," is the baby's picture-book idea, long since discarded from all volumes above the value of sixpence coloured. From the Syriac *charab* (so I read) the cherubim are imagined to have indicated *the mighty ones*, or heavenly powers: they were either in whole or in part *pairs of wings;* but this is all we know. Josephus says expressly that they were *not images*. But even if this were otherwise, the special instance, the single exception, the remarkable and most solemn exception thus constituted, would be only a proof of the rule which provided against their multiplication as idols.

The brazen serpent of Moses is a better case for my opponent; but here the special and solemn exception to a rule is clear.

The heraldic emblems of the tribes are a still better case for him; but I think there can be no historical doubt that these came into use with direct and open idolatry.

The delineative art in Solomon's temple is still a better case than all: but at that later period the art question has passed into another phase; we must confine ourselves to the Mosaic age alone. Time changes all laws; we do not imagine that the making of statuettes could be forbidden for ever; but that for the Mosaic time it was a matter for absolute prohibition I think is clear.

That the shrewd genius of Mohammed (who took Moses for his model), interpreted the principle in question in the sense I suggest, is well known. Christianity, he saw, had become the religion of the world, proclaiming the eternal fact—the self-evident and universal maxim—that GOD is ONE. But the detail of Christian theology (he would say) had placed not only the Son, but the Mother on God's throne; and all surrounding them, there were the angels of heaven and the spirits of the just as demigods. Monotheism was lost. The hero-worship of the old Roman empire had become the saint-worship of the new. And long ago, step by step, the churches had become their "chambers of imagery." Three hundred years before, the use of images had been made the solemn subject of denunciation by the Fathers and even by a council of the Church; but all in vain: the house of God, who is a spirit, was filled with idols. Christianity, therefore, in the eye of the new monotheist of Arabia, had lost all its essence; it would be a vain task for him to attempt to overthrow the polytheism of his native land by referring to a theoretical monotheism such as this,—whose practice was a polytheism of the most complicated kind. It would be a far easier task to set up a new faith. To do this he took the simple course of following the Christian principle of monotheism back to its beginning. The day has gone by for alleging that he was not sincere, according to his light. He communed with Moses. And amongst other elements he adopted in its very strictest form this our second commandment. God is a Spirit, he declared: *the use of any idol* is sin: to guard this law *the making of the idol* is sin; to guard this in its turn, *the making of any image whatever* is forbidden: and such is Mohammedan law to this day.

Lastly, to this day also, "*the Jews absolutely condemn all images*, and do not so much as suffer any statues or figures in their houses, much less in their synagogues or places of worship." I quote the "Bible Cyclopædia" (1841).

The question whether these facts agree with the opinions of one school of Christians or with those of another, I must beg to be excused from debating. I speak with reference, not to theology, but to art and history alone.

When your correspondent speaks of the virus of Puritan and Protestant tradition enslaving and poisoning English minds, I for one have no answer for him, except I say that the Puritan or Quaker principle of creed which repudiates all art as *vanity* (an altogether modern question) is one which we no doubt will both concur in thinking a very feeble idea indeed. ROBERT KERR.

MERCHANT TAILORS'-HALL, THREAD-NEEDLE-STREET.

SOME years since the ceiling of Merchant Tailors'-hall, which was of plaster, fell down, and it was necessary, in order to prepare for a meeting about to be held at the hall, that it should be restored with the utmost despatch. Mr. Hardwick having been called in, he advised the entire removal of the plastered ceiling, which he considered unsound, and Messrs. Cubitt, under his direction, with great promptness, removed the old work and substituted, as we recorded at the time, a ceiling of wood. The great object then being despatch and security, no attempt was made to give any decoration to the work, which, in fact, resembled nothing so much as the deck of a ship, turned upside down.

In the present spring, the Master and Wardens of the Company, Joseph Turnley, Esq. George Parbury, William Forster White, William Gilpin, and William Jackson, esqrs. having determined to decorate the ceiling and walls of the hall, the work was entrusted to Mr. Edward I'Anson, the present architect of the company. They subsequently determined on decorating the drawing-room, principal staircase, western corridor, and dining-room. The work was let by tender, and carried out by Mr. Rider, of the Borough, who associated with him Mr. McLachlan, of St. James-street, as decorator. The whole work was executed in about ten weeks. The architect, of course, felt that the decoration of the hall was the work which required the greatest consideration; for although a noble room, built by Jarman, the City architect, soon after the Great Fire of 1666, it is by no means pure in its architectural features. The chief note is, however, given by the late Gothic character of its windows, and although all the woodwork and panelling round the hall are of the style of the seventeenth and early part of the eighteenth century, the windows certainly form the predominant feature. Mr. I'Anson, therefore, wisely adopted in the decoration of the ceiling the style of the latest Mediæval decoration, endeavouring to keep all the detail as pure in character as possible.

The old boarded ceiling was retained as the basis of the work, and the new ceiling is entirely composed of wood, chiefly oak, enriched with colour and gilding. The span is divided into bays, corresponding with the windows, and filled in with cross-beams and star-shaped coffers. On the sides of the main beams are written in gold letters, on a dark ground, the names of the masters of the company, for about sixty years back; and the stone trusses which support the beams are decorated with the armorial bearings of the present master and wardens.

The walls are covered with a diaper pattern, enriched with gilding, on an orange-coloured ground. The screens at either end of the hall are painted oak, but the wall linings at the side are painted a maroon colour, which was thought likely to add value to the other part of the decoration. Their dark colour is relieved by some light lines round the panels, and by the arms of the members of the court of the company, and gilt bands bearing their names.

The wainscot screens would have been restored as wainscot, by removing the paint, but it was found that many parts were of deal, and time did not permit any extensive restorations. The general effect of the hall is very satisfactory.*

* The length of the hall between the walls is 90 feet, besides the picture gallery at one end, and the musicians' gallery at the other, about 12 feet wide each. The width of the hall is 45 feet.

The drawing-room has been decorated in white and gold, with dark-marbled pilasters (too dark, perhaps, for the tone of the rest); and the ceiling, which was before perfectly plain, has had raised bands of ornament added, enriched in gold and colour.

On the staircase the paint has been removed from the handrail and balusters, and the fine oak carved work restored. The ceiling has here also been enriched with raised ornaments and shields, but, except the necessary gilding to the shields; none other is used. In the picture gallery no decoration has been applied on the walls, and but sparingly on the ceiling, so as not to interfere with the pictures. The prevailing tone of colour is the same as the hall, with which room it is connected by an open arcade. The western corridor has been decorated by marbling the walls and columns, and ornamenting the ceiling panels in colours.

And, lastly, the dining-room which faces the west corridor, used by the members of the court, has had some simple coloured decoration added to the ceiling.

There are several pictures scattered about, including a head of Henry VIII. by Paris Bordone; and full lengths of George III. and his queen, by Ramsay; Lord Eldon, by Briggs; and Wellington, by Wilkie. The company have preserved their ancient state palls, and some tapestry hangings of great interest.

On the 29th, the Master and Wardens entertained at luncheon a number of the architect's friends and professional brethren, including Mr. S. Angell, Professor Hosking, Mr. Lewis, Mr. W. Papworth, Mr. M. D. Wyatt, Mr. C. C. Nelson, Mr. Butterworth, Mr. Allen, Sir F. Graham Moon, and others, when the Master expressed his appreciation of their architect's services.

VICTORIA-PARK.

AT this season of the year those dwelling in the west of London who take an interest in the social progress of the people will derive pleasure from a visit to this spot, which, by skilful hands, has been made a place of beauty highly enjoyed by a large multitude. Those who have never seen this park will be surprised at the amount of ornamental gardening which has been already brought into flourishing condition. On entering from the Victoria-park station of the North-London Railway, the lilacs and other plants, the greenness and trim condition of the grass, the numerous bands of cricketers of different ages, with small children, loaded with buttercups and sorrel from the fields beyond, on their way to their dingy homes, presented a scene the other day of the most pleasing description. When looking at those engaged in healthy and athletic sports, the remembrance arises of the days when London's citizens thronged to Moorfields to practise the use of the long and cross bow, and other warlike weapons, and it would be far from undesirable if attention were given to such exercises now, substituting modern weapons.

As we approach towards the centre of the park along excellent roadways, in most directions nice little bits of distance meet the eye, such as the old grey tower of Hackney Church, seen over trees, and other buildings of more recent date, but which have good architectural outlines; and in parts of the park margin rows of houses have sprung up, which, although smaller and less presuming than those which surround the Regent's and Hyde parks, are snug and comfortable, and well decked with flowers and plants. It must be confessed that in some parts tall chimneys and gas-works are less agreeable, but it may be noticed that the landscape gardener is devising means of concealing these.

The luxuriance of everything which has been planted in the park will strike most strangers. Some of the gardeners here will soon account for this, by stating that the ground has been well drained. The first operation was to dig a deep trench completely round, and the subordinate branches have been carefully completed.

The broken and varied surface of Greenwich-park gives it a charm which is possessed by none of those in the metropolis, and it has been suggested that the Victoria-park might be greatly improved by artificial embankments, well planted. It is, however, said that this is a very expensive work, and that it is difficult to persuade those concerned to provide the requisite funds. A large pool has been made ready for bathers, and we were told that from 7,000 to 8,000 use it every week. This great public convenience in such a district should be improved and enlarged.

There is also a gymnasium which seemed in active demand. Some of those who were strength-

ening their bodies by this exercise did not seem to be of the most worthy description, and the language used by them could not be beneficial to boys of better class. We refer to it simply as showing the difficulty which exists in the metropolis of providing the means of amusement for the young, without the danger of contamination.

On fine Sundays from 60,000 to 70,000 people, we are told, from pent-up neighbourhoods, flock to this park; and it is easy to fancy how much good must be effected by such a change. The money expended will produce good fruit; and as years roll on, the value of the park will be even more appreciated.

ON THE INFLUENCE EXERCISED ON CERAMIC MANUFACTURES BY THE LATE MR. HERBERT MINTON.

AT the Society of Arts, on the 26th ult. Mr. M. Digby Wyatt read an interesting paper "On the Influence exercised on Ceramic Manufactures, by the late Mr. Herbert Minton." As we have already given some particulars of Mr. Minton's valuable career, and borne testimony to his usefulness, we confine ourselves to portions of the paper containing general information. The early stages of ceramic manufacture in England, said Mr. Wyatt, were marked probably by no great originality. In the production and ornament of porcelainous or semi-transparent wares, very shortly after the year 1700, great excellence was attained on the Continent, at Meissen, Moscow, St. Cloud, Höchst, Doccia, and Chantilly; and although some evidence exists of the contemporaneous establishment in this country of the manufactories at Bow and Chelsea, a corresponding degree of excellence does not appear to have been attained in them at so early a date. It was during the period between the years 1750 and 1765, that the Chelsea factory, with its soft and semivitreous paste, most successfully rivalled the great establishments of Vincennes (subsequently Sèvres), and Dresden. George II. was a liberal supporter of it, causing workmen, artists, models, and even materials to be procured from Saxony and Brunswick. In 1763 a magnificent service, the cost of which was no less than 1,200*l.* was made for the king and queen, under the superintendence of a foreigner, a M. Spremont, who directed the works for many years. On his retirement, about 1765, the manufacture was abandoned in London, and the principal workmen betook themselves to Derby, where an establishment had been set up in the year 1750, by a Mr. Dewsbury. In the following year a rival sprang into notice at Worcester, in the person of Dr. Wall, with whom a triumphant course of ingenious originality may be said to have been inaugurated in England. His principal invention is believed to have been that of printing on biscuit.

Up to the year 1768, no porcelain capable of bearing an extraordinary heat, and so hard as to resist scratching with a steel point, had been made in this country, for want of those materials which had, prior to that date, been discovered on the Continent, in Saxony, at Aue, by Böttcher, and in France, at St. Yrieix, by Madame Darnet. In the abovementioned year the discovery of Cornish kaolin and pegmatite, by Mr. Cookworthy, of Plymouth, introduced a new element into the manufacture, and hard china was speedily made in considerable quantities at Worcester. From this parent establishment several others branched off, the most important probably being the Caughley Works, near Broseley, Shropshire, which were directed by John Turner, who joined them from Worcester, and who is stated to have discovered the art of printing in blue on china in 1780. It was under John Turner that Mr. Herbert Minton's father was brought up.

Such was the general aspect of the porcelain trade in England prior to 1788, and it remains to trace what had been done in the opaque earthen and stone wares. From a very early period pottery was made in Britain, and the art never appears to have been altogether lost. In the reign of Elizabeth, some dexterity was acquired, and specimens are extant evidently made of slip or clay brought into a fluid condition, and cast into moulds. The Staffordshire "tigs," or drinking-cups, certainly abounded in her reign; and much rude pottery was subsequently produced from local plastic clay, occasionally ornamented with pipe-clay patterns, and glazed with a coarse lead glaze. A great improvement on this common pottery was effected, about the end of the seventeenth century, by the brothers Elers, natives of Nuremburg, who discovered, at Bradwell, near Burslem, some fine red clay, with which they made a rude but hard kind of Samian ware, which they ornamented with raised patterns, formed in copper stamps and glazed with a salt glaze, which they are believed to have been the first to introduce in England. The secrets of these Germans were discovered through a stratagem, by a man of the name of Astbury, and the foreigners were speedily ejected through local jealousies. To Astbury's son is accorded the merit of the discovery of the use of calcined flint in combination with clay, in the year 1720, and from that period commenced the manufacture of cream-coloured, buff, and dingy white, stoneware—destined to speedily assume an altogether different and superior aspect under the master handling of the celebrated Josiah Wedgwood, who was born in 1730, and who died in the year 1795. He first set up in business in a very humble way at Burslem, in Staffordshire, in the year 1759, and the value and speedy popularity of the inventions he made within a few years of that date, supplied him, in 1771, with the means of founding his celebrated establishment at Etruria. The wares of Wedgwood must be so well known to most of those present that it is probably unnecessary to dwell upon them. It may suffice to remark that they were produced in great abundance, and largely exported previous to the year 1788.

In spite, however, of various ingenious efforts, which cannot now be even enumerated, little that was good was produced in any considerable quantity previous to the close of the eighteenth century, excepting by the establishments of Derby, Worcester, Caughley, Leeds, Wedgwood, and Spode; the latter, through his judicious use of calcined bones and felspar, obtaining an enormous business in common but very good earthenware. * * *

Fifty years ago, Mr. Thomas Minton's establishment at Stoke gave employment to just about fifty hands, and at the date of his son's death upwards of 1,500 were in active operation. It has been estimated by that distinguished authority, M. Leon Arnoux, that the value of our exports of ceramic manufactures, which amounted to 573,000*l.* in 1840, cannot now be valued at less than 2,500,000*l.* having more than quadrupled in the interim.

The hard porcelain manufacture, which, though, through the discoveries of Cookworthy, extensively manufactured for a time, had been altogether abandoned in this country until the year 1839, in which Mr. Minton, in conjunction with Dr. Turner, took out a patent for its manufacture.

The plan proposed, however, was not carried beyond a series of experiments until 1849, when, with the assistance of M. Arnoux, Mr. Minton resumed the attempt to make a body infusible, at very high temperatures, and of elements as pure as to be unaffected by ordinary chemical solvents. The renewed experiments succeeded so well, that in 1851, vessels for the laboratory were exhibited by Mr. Minton, and pronounced by judges to be superior to the Meissen and Berlin wares of the same description, which had previously entirely supplied the English demand, amounting to little less than 60,000*l.* worth annually. The result was most favourably reported on by the Duke of Argyle, president of the jury of Class XXV. at the Great Exhibition of 1851, who stated that Mr. Minton's crucibles and capsules were subjected by Mr. Henry, at the instance of the jury, to the severest chemical tests, along with specimens from Dresden, and were found to stand those tests with perfect success; and that, besides being fully equal to the German ware in quality, they had the additional merit of being considerably cheaper. The jury, therefore, looked upon the successful establishment of this manufacture in England as a matter of much importance and interest in a scientific point of view.

We now arrive at the third section of our subject, the manufacture of "Parian," the well-known material in which a very fair imitation of marble has been attained. There has been considerable discussion with respect to the rival claims of the houses of Copeland and Minton to the origination of this material; and the jury of 1851, after receiving statements from both firms, deduced therefrom, that "whichever party may have actually been first in publicly producing articles in this material, both were contemporaneously working with success towards the same result." On these grounds, as well as on their conviction that all of those bodies, respectively known as Parian, Carrara, and statuary porcelain, were but modifications of that which had been long known, and applied to the same department of art under the name of biscuit, the jury declined to adjudicate between the claimants. They, however, fully appreciated the value of the material and its probable salutary influence on public taste. My own impression certainly is, that as a manufacturing invention, after the Sèvres and Dresden biscuits, and Wedgwood jasper, there was but little merit in the introduction; but as a commercial idea it was, unquestionably, most happy and well timed; and I am inclined to receive with great respect the statement of Mr. Robert Hunt, that this idea originated with Mr. Thomas Battam, the well-known and able artist directing the extensive porcelain manufactory of Mr. Alderman Copeland, at Stoke-upon-Trent, in the commencement of 1842. After a series of experiments he succeeded in producing a very perfect imitation of marble, both in surface and tint. One of the earliest specimens was submitted to his Grace the Duke of Sutherland, who expressed his unqualified admiration of the material, and his high appreciation of the purposes to which it was being applied, and became its first patron by purchasing the sample submitted. This was on the 3rd of August, 1842, a date which marks a memorable event, as the commencement of a trade now not only of large commercial advantage to the potteries generally, but, fortunately, of a class that has most materially advanced the artistic state of English ceramic manufacture.*

From the first launching of the material, a lively competition sprang up between the firms of Copeland and Minton, and to both it unquestionably proved a source of increased profit and extended reputation. It was also most useful in two ways—in teaching the public eye to recognise pure beauties in graceful form divested of any possible vulgarity, and in attracting to the potteries a class of artists such as had not found employment there since the days of Wedgwood.

The manufacture is one of much difficulty, and not only is great care necessary in fitting the various parts together, each object being moulded in several parts, which are united and dried, and then exposed to successive firings; but much judgment and experience are requisite in drying and firing, as in these operations they shrink to three-fourths of their original size.

Mr. Minton introduced various modifications into the process at first adopted at his works, and succeeded in reducing the shrinkage from one-fourth to one-fifth. To the members of the Society of Arts, who must recal the successive brilliant displays presented at their exhibitions of 1847-8, and 1849, by the firms of Copeland and Minton, as well as their efforts in 1851 and 1855, it is unnecessary to dwell further upon the results respectively attained. We pass, therefore, fourthly, to that branch of our subject in which Mr. Minton's individuality shone most conspicuously, viz. the manufacture of those encaustic tiles in the production of which he remained at his decease without a rival.

It was during the last century only that the attention of antiquaries became specially directed to the ancient tiles to which the designation of encaustic has been given, and which were very generally adopted by the architects and builders of the Middle Ages to form the pavements of churches and other structures throughout our native country and some parts of France, especially Normandy. * * * *

It would be irrelevant to dwell upon the archæological interest of these relics of the past, but it is essential to note the important part they played in enhancing the general decorative effect of the finest Mediæval interiors. A close examination of many of these tiles, and the discovery, at Great Malvern and St. Mary Wilton, near Droitwich, of two ancient kilns, in which tiles in different stages of manufacture were found, enabled those interested in the matter to predicate with almost certainty the ancient process of manufacture, which appears to have been somewhat as follows.

The moist clay having been well beaten together was compressed into the form of thin squares, which were generally of the size of from four to six inches, and one inch in thickness. These were probably exposed to the sun until they had acquired the proper degree of plasticity to retain any design impressed upon them by a stamp, so formed as to indent the ornamental pattern upon the face of the tile. The indented pattern was then filled up with a different coloured clay, which was usually pipe or white clay. After the tiles were put into the furnace, a thin coating of powdered lead ore, mixed with clean sand, was probably dusted over their surfaces, so as to give a vitreous glaze when withdrawn from the kiln, which gave permanence to the work, and added to the richness of the effect. This glaze gave the

* The first important impulse to the use of this material, was given by its employment by the Art-Union of London, in the reproduction of Gibson's "Narcissus:" this was in 1844.—ED.

white clay a slight tinge of yellow, and added fulness of tone to the red colour which usually formed the ground upon which the pattern was relieved.

The revival of these processes was, I believe, first contemplated by Mr. S. Wright, of the Staffordshire Potteries, about thirty years ago, who took out a patent for it as an original invention. It was some years before any like specimens could be obtained, but he advanced sufficiently to encourage the hope that success might be ultimately attained. This, however, was reserved for Mr. Herbert Minton, who purchased the patent, to effect. He set to work with a thorough English determination to succeed; and, with untiring energy and perseverance, notwithstanding repeated failures, and many difficulties and obstacles which presented themselves in his successive experiments, at length succeeded in producing tiles very far superior to those of the ancients. From the above hasty description the problem of manufacturing encaustic tiles does not appear, at first sight, to be attended with any great difficulty or complexity: in practice, however, in the present day, the case is very far different. In the first place, clays have to be mixed to burn with certainty to uniform tints throughout their body. In the second, each of these bodies requires different tempering so as to correct the irregularities of shrinkage induced by the diversity of materials mixed with the clays to obtain the required colours, so that the filling in in one-coloured clay shall not pull away and crackle all over, or detach itself from the incised base into which it is to be fixed by firing. In the third place, the range of colours used by the potters of the middle ages was limited to two—buff and red. Gradually, Mr. Minton added to this range marone, cream colour, black, grey, and fawn, in thorough coloured clays; and blue, green, white, crimson, and purple, in enamels of porcelainous body, floated over portions of the surface of the tile slightly sunk to receive comparatively thin coatings of brilliant colours.

The difference in the shrinkage of the clays, while merely drying, or from simple evaporation, and while they are exposed to the heat of the fire, is an even more difficult problem than that involved in the adjustment of the materials for a compensating balance-wheel to a chronometer, or a pendulum to a clock, since that which does for the drying may not suit the firing, and *vice versâ*. Dependent upon this nice balance of conditions are not only the coherence of the surface without any gap or fissure, but the flatness of the tile as a whole. This last quality may be also deranged by the kiln not working equally, so that one side of a tile shrinks before the others. The remedy is chiefly derived from an intimate practical acquaintance with the actual shrinkage of the various materials, and not only so, but also of their various combinations. These last are not always, nor are they often, results that can be calculated from the known facts of the separate materials of which the tiles are composed. Great practice, based upon costly experiment, can alone give the necessary knowledge.

The great danger with which the makers of encaustic tiles have to guard against continually is the impending risk of having a whole kiln full of valuable tiles spoiled in the firing, for in order to bring out the colour and obtain the requisite hardness of texture the fire must be carried to the very verge of destructiveness; and, by overstepping that limit but a little, actual destruction to the tiles in the kiln ensues. Moreover, until the kiln is opened, no one can certainly tell what its fate may be. The criterion usually adopted is the shrinkage of "trial pieces," which are tried by a gauge; and, as soon as they will drop into the gauge, the kiln has been sufficiently fired. Kilns usually take four days and four nights firing, and after that three or four days cooling. * * *

At this distance of time it is difficult to determine whether the manufacture of Majolica ware was derived by the Italians from Sicily, Greece, or Majorca, or whether they owe the fabric to the improvements introduced by Luca della Robbia early in the fifteenth century, previous to which the pottery of Umbria and Tuscany was a common earthenware, covered with an opaque veneer, made from a white clay found in the province of Sienna, and known as "terra di San Giovanni." When covered with this revêtement, the vessel was heated till the outer coat was reduced to a state of "biscuit:" it was then covered with a glaze, in which any colour desired was mingled, or the white coating was ornamented by painting in enamel colours, which were then covered with a transparent glaze. A final baking vitrified the colours and glaze, thereby rendering them permanent. Wares so produced are known to connoisseurs as "Mezzo-Majolica." Amongst many other improvements, Luca della Robbia substituted, for the original coating of white clay, a thin opaque glaze composed of sand and tin, with a small quantity of antimony and other metallic substances. Through his rare talent as a modeller, his ware attained an extraordinary popularity, and was used extensively as a beautiful architectural adjunct throughout Tuscany. Some idea of the scale upon which this material was employed may be obtained by an inspection of the great frieze from the Ospedale dei Poveri, at Pistoia, a reproduction of which surmounts the Renaissance and Elizabethan Courts at the Crystal Palace. Our modern architects have singularly neglected to avail themselves of Mr. Minton's beautiful revival; and I believe that my use of it, at the Paddington Station, and in one or two other places, is almost unexampled. Luca della Robbia's process appears to have been known to the Arabs in the thirteenth century, and is believed to have been in their possession as early as the ninth century.

An extensive trade in vessels of Majolica ware was carried on in Italy, in the sixteenth century, principally in the Duchy of Urbino, whose duke, Guid'Ubaldo della Rovere, in 1509, granted a patent to Giacomo Lanfranco, of Pesaro, for the application of gold to the ornamentation of earthenware. Asciano is considered by Passeri to have been the first town in Italy possessed of an established manufactory of Majolica ware, but at the date referred to a very large quantity was produced in the towns of Perugia, Rimini, Spello, Bologna, Sienna, Forli, Civita-Castellana, Faenza, Gubbio, &c.; in the last-mentioned of which, some years later, a series of improvements were introduced into the manufacture of this species of pottery by Maestro Georgio Andreoli, who introduced a splendid ruby colour into his draperies. When completed, the painting was often covered with a glaze, which in firing gave a peculiar brilliant metallic and prismatic lustre to the surface of the object fired. Vincenzo Andrioli, the son of Maestro Georgio, carried on and still further improved upon his father's manufactures.

Majolica ware attained great perfection under the Fontanas and Baptista Franco, declining in excellence under the too facile hands of the Zucchari.

During its best days—between the years 1520 and 1560—the engravings of Marc' Antonio, Marco di Ravenna, and others, from the designs of Raffaelle and Julio Romano, became diffused through the country, and were eagerly seized upon and applied to the decoration of the ware, which at that time was largely used by the Italian nobles for their tables, as well as for ornamental purposes. Timoteo della Vite, one of Raffaelle's favourite pupils, is said to have greatly improved the forms and ornaments of these vessels. Some specimens of Majolica ware, which had formed part of the collection of the duke of Buckingham, having come into Mr. Minton's possession; his attention was directed by them to a revival of the art,—with what success is shown by the various beautiful productions which adorn the room this evening.

For much of the success of this revival, Mr. Minton was indebted to the consummate knowledge of enamel colours and glazes, as well as to the taste and judgment possessed by M. Leon Arnoux. His brilliant success in Palissy wares, in highly-decorated earthenware and encaustic tiles, unquestionably won for Mr. Minton the great honours he received at the Exhibition in Paris of 1855. The demand for these objects is increasing beyond the utmost capabilities of the vast establishment of Stoke to supply. To recur to the story of Barnard de Palissy, would be only to repeat some thrice-told tale, already worn threadbare by authors and artists. The peculiar character and design of his wares must be known to all; and it is not too much to say that Mr. Minton's productions can scarcely be distinguished from the best of those over which the genius and influence of François Briot is most manifest.

ROYAL INSTITUTE OF BRITISH ARCHITECTS.

ON Monday, the 31st of May, an ordinary general meeting of the members was held at the rooms, in Grosvenor-street, Mr. Hussey, V.P. in the chair, when, after the announcement of the donations,

The Rev. R. Burgess, B.D. read a paper "On the Egyptian Obelisks, in Rome, and Monoliths as Ornaments of Great Cities."

Mr. John Bell also read a paper "On the Application of the Entasis to the Obelisk."

In a discussion that ensued, Mr. Tite, M.P. concurred with Mr. Bell in thinking that the judicious application of the entasis to the obelisk would improve its artistic effect. He also concurred with Mr. Burgess as to the applicability of monolithic obelisks to ornamental purposes, especially in connection with park scenery, and regretted that in two instances monuments of a different character had been preferred by committees. He alluded first to the Scott monument at Edinburgh, for which his friend Mr. Playfair had suggested an obelisk, as a necessary feature in the view of Edinburgh; and, secondly, to the memorial of the Great Exhibition intended to be erected in Hyde-park. He was not aware that Mr. Bell had designed an obelisk for that memorial, but in assisting the committee of selection, he, Mr. Tite, had expressed his opinion that such a form of monument was best adapted to the situation and to our climate, and it was well understood that Prince Albert was of a similar opinion. The committee, however, by a majority, had selected a group of statues. Mr. Tite next referred to a modern obelisk in the gardens of the Colonna Palace at Rome, which was of good form and proportion, and on which hieroglyphical inscriptions had been successfully introduced; and also to an Egyptian obelisk from Philæ, set up by Mr. Ranks, in his park in Dorsetshire, which was a very pleasing example. With regard to Egyptian hieroglyphics, he had paid some attention to the subject, and considered that much of the credit due to Dr. Young for deciphering them had been too often given to Champollion; and as French critics were very apt to assume unfairly the merit due to English discoverers, he thought it was the duty of Englishmen to vindicate the claims of their own countrymen on all possible occasions. Mr. Burgess had suggested that the pyramid forming the summit of the obelisk was calculated to collect and reflect the rays of the sun, and it was remarkable that the Luxor obelisk in Paris had the upper part of the shaft cut or recessed, as if to receive a metal termination, which would increase the effect referred to. Dr. Lepsius had introduced modern hieroglyphics in the museum at Berlin, where there was a restored Egyptian temple with hieroglyphics on the frieze, recording the particulars of its erection. The question of moving large masses of stone was a very interesting one. The block of granite for the statue of Peter the Great at St. Petersburg was removed from the marshes of Finland (seven miles from the coast), under the superintendence of a French engineer, with great facility and economy. Timbers grooved with iron were employed, and made to run over the rollers, or rather what might be termed cannon balls of gun metal; and he thought this principle had been lost sight of in launching the *Leviathan*, where, instead of using different metals in contact with each other, iron plates had to slide over plates of the same metal. The friction was consequently enormous, and the delay and expense very great. It was much to be regretted that in the present age the ornamental was too often sacrificed for the useful, and that they built less for posterity and in a more make-shift way than in former times. Cleopatra's Needle was left half buried, and exposed to mutilation, because, in spite of many efforts to induce them, the Government would not go to the expense of bringing it to England. Mr. Tite concluded by moving a cordial vote of thanks to Mr. Burgess, whose example in furnishing such admirable paper to the Institute every year, notwithstanding his numerous avocations, would, he hoped, be followed by the members themselves.

Mr. Bonomi observed that there was a very slight concavity on one side of the Luxor obelisk, and a convexity on the other; but whether this was intentional on the principle of entasis, or whether it arose from a defect in the masonry, could not be ascertained. None of the obelisks in Rome had been measured to ascertain whether they had entasis or not. As an instance of modern hieroglyphics he referred to the inscriptions on the Egyptian court of the Crystal Palace, as being remarkable.*

Mr. Scoles moved a vote of thanks to Mr. Bell

* We have since received the following note:—"In the discussion which took place at the Royal Institute of British Architects after the reading of the papers, it was my wish to state that, although Mr. Angell, a member of the Institute, had suggested, many years ago, the desirableness of ascertaining whether those remarkable monuments of Egypt were bounded by straight or slightly curved lines, such as the entasis of the Greek column, it had not yet been investigated by actual measurement; but that M. Lebas, the French engineer who was employed to remove the obelisk of Luxor to Paris, had discovered, and described in his work on the subject, that both the obelisks of Luxor were curved on plan on the east and west faces, but in elevation the east surface was concave, and the west convex. The exact measures of these curves are given in the work of M. Lebas—cap. 4, page 26.—JOSEPH BONOMI."

and observed, that Mr. Bonomi had himself employed hieroglyphics prior to Lepsius.

The chairman said obelisks were often objected to as interfering with the effect of neighbouring churches and as too much resembling factory chimneys. He believed the cost of setting up the Paris obelisk had been 80,000*l.* and that this fact had deterred the English Government from removing Cleopatra's Needle.

Mr. C. H. Smith alluded to the removal of the great Sunderland lighthouse, which was 120 feet high, 18 feet diameter, and had been removed bodily a distance of 120 yards.

Mr. Bell, in acknowledging the vote of thanks, said he had made inquiries that led him to the conclusion that blocks of granite might be obtained in Cornwall of the length of 80 feet, for about 5,000*l.* and that the difficulties of removing them might be easily surmounted.

The Rev. Mr. Burgess said it was wonderful what might be accomplished if they would only start a "Monolithic, Phonetic, Obelisk-moving Joint-Stock Company." He was very anxious to see some of the finest situations in the metropolis occupied by monoliths, and he hoped good would result from the present discussion.

RAILWAY AND OTHER ENGINEERING WORKS ABROAD.

THE section from Vesoul to Belfort, just opened to the public, is 62 kilomètres in length, and contains seven stations, — Colombier, Genevreuille, Lure, Rouchamp, Champagne, and Bas-Evette. The heaviest works on this section were the Genevreuille and La Chuillière tunnels, and the cutting of Des Barres, opposite Belfort. Thus, the line from Paris to Mulhouse (491 kilomètres) is completed. The concession was granted in 1853, but the works only commenced towards the close of 1854. By the opening of the last remaining section of the Mulhouse line, nothing is left at the company's charge but the construction of some secondary lines, comparatively inconsiderable.

A tramway, called in France an American railway, is about to be established in the department of the Pas du Calais, traversing five towns and fifty communes, forming an aggregate population of 180,000 souls. The line is to be 30 kilomètres long, and the estimate, including the works of the Montreuil pass, is 3,350,000 francs.

The preliminary formalities of the Phillippeville and Constantine railway in Algeria have been terminated. The Conseil Général of Ponts and Chausées have given approval of the surveys submitted by the Company, so that nothing remains to be arranged but the formalities and conditions required by the French Government.

The same Government engineers have also reported favourably upon a scheme for a line from Algiers to Oued-Riou, the boundary between the sub-division of Orleansville and the province of Oran. The Minister of War has notified to the Governor-general of the colony the above decisions, with authority to execute the earth-works upon the different portions which are definitely approved of. Already the troops are in the field, equipped for work. The tools, transport, and encampment arrangements are completed. Independent of these troops, two workyards of about 750 men, furnished by the penitentiaries of Algiers and Douéra, will be placed between the former town and Birtouta. On the 4th instant, the above forces turned the first sod between Maison Carrée and Bouffarick, on the Algiers and Blidah line.

The official inauguration of the extension of the railway from Barcelona to Granollers, as far as the French frontier, took place three weeks ago, in presence of the engineer in chief of the Barcelona division, the directors of the Catalonian General Credit Society, and several other personages. The members of the Council of Administration performed the interesting ceremony of striking the first blow at the Cardeden tunnel. The tools bore the significant inscription, "Galliæ viam aperio," and were of workmanship and elegance worthy of so great an occasion. Immediately afterwards the men were put to their work along the line of tunnel.

On the 7th ult. the treaty relative to the construction of a permanent bridge on the Rhine, near Mayence, was signed by all the Governments interested.

The opening of the line from Darmstadt to Mayence is fixed for the 9th of June, the Grand Duke's birthday.

On the 1st ult. a train of honour inaugurated the section of the Luxembourg Railway between Namur and Ciney.

The inauguration of the Madrid and Alicante Railway, which was to have taken place on the 12th ult. is retarded, owing to circumstances of which the administration had no control. It is thought that the Queen will undertake the trip. Nine locomotives are being mounted at Alicante, and six new ones have also arrived. This important line, opened to public traffic only a few days since, has already changed the aspect, not only of Alicante, but of most of the towns and villages it traverses. The value of property has generally been doubled. The town itself of Alicante, hitherto so desert and silent, is traversed by commercial thoroughfares, and the merchandise arriving from all quarters in great quantities, causes a busy movement hitherto unknown. In the port the crowd of ships is so great, that they find moorings with difficulty, many of them being obliged to anchor outside the bar. The animation which reigns here will be repeated in Galicia, Asturia, Old Castille, Biscay, Estramadura, and Andalusia, at the moment of their enjoying the benefits of railway communication for the first time.

From Madrid to Avila, the first section of the Northern Spanish Railway, the works are in a great state of advancement. From Avila to Burgos, the earthworks were finished up to 157,016 lineal mètres, in March last, during which month 18,269 linear mètres were executed. Ballast is laid for 32 kilomètres. The viaduct of Arévalo is in course of construction; also the eleven bridges of Gomez Nahana, Medina, Valdestillas, Viana de Vega, del Duero, first and second of Esqueva, Cabezon, Carrion, Torquemada, and Buniel. The Duenas-bridge is completed. 4,149 men were employed on this section during the month of March.

On the section from San Isideo de Duenas to Alar, the same activity has been displayed. 21,317 lineal mètres of earthworks were done before the month of March: 652 lineal mètres were added during the month. Two kilomètres of ballast are laid. The Cabanas-bridge is finished, and six others are in construction, by Monzon, Pina, Fromista, that over the Boedo, Abanados, and Herrera. 1,000 men at work for the above month.

On the first section of the Madrid and Saragossa line the same activity is displayed: 1,980 men are employed daily, 180 pair of horses, 249 carts, and 11 waggons.

On the 28th April last, a treaty was concluded between the representatives of the province of Alava and the *Crédit Mobilier* of Spain, by which the company engage themselves, for a subvention of eight million reals, to construct the railway destined to unite Vittoria with the general northern line.

The cabinet of Berlin has informed that of St. Petersburg, that the Prussian Chambers having voted the necessary funds, the Government is ready to undertake this year the construction of the railway from Kœnigsberg to the Russian frontier. Thus the line to St. Petersburg can be opened in the spring of 1860.

The great Russian Railway Company has proposed to the government to take up the line from St. Petersburg to Moscow, offering to reimburse the State 170 million roubles, the cost of that line, and to construct a third line of railway valued at twenty million roubles.

The construction of Russian railways has rendered necessary the erection of buildings or stores for imports and exports on the frontiers; and the Minister of Finance of that empire has thought it fit that the expenses of these constructions should be defrayed by a tax on the importers and exporters, who will benefit by such storehouses. So, from the 12th July next, an additional duty of five kopecks per rouble is to be levied upon all European produce, for export or import, that may be in the depôts after that date. Sugars, raw and refined, are alone excepted from this imposition.

Russia presents a development of 1,000 versts of railways at present, namely, Warsaw to Cracow, and Zarskezelo to Peterhoff. The following concessions have been made to the Russian Railway Company (*La Grande Compagnie des Chemins de Fer Russes, Place Vendome, 15, Paris*):— Moscow to Theodosia, and to Nischi-Novogorod; Kursk to Libau, St. Petersburg to Warsaw, Warsaw to the Prussian frontier,—altogether 4,000 versts.

The committee of the Exchange of Riga have obtained the concession for the Riga and Dunaberg Railway (210 versts).

The line from St. Petersburg to Warsaw is in construction, and the works are about to commence on the Nishni-Novogorod and Theodosia lines.

In addition to the above, the following lines have been submitted by different companies:—

1. Moscow to Sartor by Klomna and Riazan.
2. Orel to Odessa by Kien and Braelau, and from Braelau to Brody.
3. Rybinsk to the Blagov station on the St. Nicholas railway.
4. Odessa to the Macakov station.
5. Riga to Mitau.
6. From the port Dubov on the Volga to Kolatzcheu on the Don.

These lines extend to 3,000 versts in all.

The following schemes are on foot:—

1. In the government of Viatka, to unite by rail the Katka and Wytschegda rivers.
2. In the government of Astracan, to unite the salt lake of Ettou with the Volga.

The works of the Moscow and Saratov railway will be commenced in 1859. The capital, forty-five million roubles, will be furnished, one half by a Belgian house, the other half by funded proprietors of Tambou and Saratov.

The organization of the Netherlands railways appears to be attended with no small difficulty. The Minister of the Interior will not adopt the whole group of lines proposed: he will keep to the order of the Chambers in only sanctioning some lines. The Minister of Finance claims the withdrawal of the law, reserving ten millions of francs for railways, with the view of appropriating that sum to the redemption of the national debt. Meanwhile, the minister declares his intention of not losing sight of railways or other useful works, but at the same time necessities of the moment must be kept in view, especially those which demand a reserve of capital. The chambers adopted unanimously this proposition. On the other hand, the shareholders of the Netherlands and Hanover railway met in a general assembly and subscribed 4,100,000 florins, to which sum the Hanoverian government and the regency of Osnabruck have largely contributed. Notwithstanding this sum, the Prussian government have refused to let the line pass through their territory, and the Netherlands government have refused all pecuniary aid to the enterprise.

AMERICAN CHIPPINGS.

IT is said that 100,000 dollars are expended annually in California in the purchase of poisons to destroy ground squirrels, but it is now proposed to construct a steam boiler of about four-horse power, mount it in a wagon, get up steam and conduct it into "the dens of the varmints" by pipes, and thus destroy them. Happy thought!

A bill has been introduced into the New York Legislature by Mr. Dayton, to regulate the manufacture and the sale of gas. It provides for "the quality manufactured," and "accurate measurement" by meter. There is to be a board of gas inspection in every city of over 50,000 inhabitants, to see that the quality of gas is to be at a merchantable standard to be fixed by a central board, composed of delegates from each local board, and to exercise strict supervision over the truthful action of the meters. These are important provisions for the interests of gas consumers, and our home legislators might with advantage follow the example of our American brethren!

Amongst the recently-patented inventions connected with building matters we find that "House heating apparatuses" occupy a prominent position. "Brown's hot-water heater" is spoken favourably of. John Child, of Elyria, Ohio, claims to effect a gradual heating and active circulation of air, by a horizontal prolonged passage. Amongst those for railway purposes are for new rails, by Leverett Ball, of Auburn, N.Y., claiming "the use of plates inserted at the middle and ends of the sections of compound rails, in combination with said sections, locked together throughout their whole length, thus binding the rail together like a continuous rail, the whole being constructed and arranged substantially."

George C. Bigelow, of Worcester, Mass., has invented a "self-adjusting door sill," level or even with the floor when the door is opened, and when closed, raised to form a close fit to the bottom of the door by means of spring levers.

So many catastrophes have occurred lately from the over-heating of furnaces, that Mr. Ebenezer Barrows, jun., of Brooklyn, N.Y., has directed his attention to a new damper, which will prevent over-heating in the hot-air conducting pipes of air-heating furnaces, when the register of the pipes is wholly or partially closed. The invention consists in placing in the lower part of each air-conducting pipe a valve or damper, hung on an axis in nearly an equilibriated state, so that when the register

of the pipes is closed and the draft stopped, the dampers will close by their gravity, and shut off the pipes from the air-heating chambers; and when the registers are fully or partially open, the dampers will be opened to a corresponding degree.

OXFORD ARCHITECTURAL SOCIETY.

AT a meeting of this society, held May 26, Mr. Lowder read a paper on "the Principles to be observed in Building Churches in the Tropics."

The subject of churches for tropical climates is one of increasing interest.

The paper was confined to churches in the tropics, and the remarks refer chiefly to West India churches. The points which call for consideration, Mr. Lowder said, are those connected with the necessities of climate, such as the extreme heat, the comparatively uniform temperature, the violent storms and rains.

For preservation against periodical hurricanes great strength is requisite, and for the purpose of preserving a sufficient supply of cool air means for excluding the sun's glare, and for the admittance of cool draughts, are necessary. In the matter of materials, each locality must decide for itself, and in ornamental decoration the natural products of each country must be the guide. In tropical countries the palm-tree is one which affords great opportunity as a subject to be used in decoration.

Few mistakes can be more injurious for the growth of architecture in other regions, than those which arise from a desire to transplant English Pointed into foreign countries: it cannot grow healthily, and fits itself but awkwardly in many ways in which it has to accommodate itself. The spirit of Pointed architecture may yet direct: it will take the materials at hand and mould them to the requirements of the country. In this way Byzantine buildings may be proper models for many of the peculiar features of tropical climates.

Some suggestions were offered in reference to the construction of roofs and windows, &c. and a general scheme of a church adapted to those countries where hurricanes prevailed: the necessity of having a cloister round churches generally in hot climates was insisted upon; and some remarks were made upon the value of furthering art in the countries themselves, by educating the native workmen and encouraging them to rival, not to imitate, the best built edifices of foreign production.

GENERAL ARCHITECTURAL CONGRESS AT OXFORD.

THIS congress will be held from Wednesday, June 9th, to Saturday, the 12th. On Wednesday, after a general meeting at two o'clock, when the objects of the congress will be explained, the new Oxford Museum will be thrown open, and remarks offered upon the architectural arrangements by Dr. Acland and other gentlemen. In the evening, papers on Oxford will be read.

On Thursday, the colleges, churches, and public buildings will be visited in succession, and remarks on them offered. At a quarter to two, the congress are invited to luncheon in the Hall at All Souls College, by the Hon. Frederick Lygon. In the evening, there will be a *conversazione* in the Society's rooms, when the subject for consideration will be metal-work.

On Friday, an architectural excursion will be made in the neighbourhood of Oxford, visiting Forest-hill, the new church at Wheatley, Cuddesdon college and church, Great Milton, Haseley, and Dorchester; returning through Nuneham-park, and visiting Sandford and Iffley churches.

On Saturday, a concluding meeting will be held, at which a report will be read on the proceedings of the Society, and the progress of Gothic architecture in Oxford and the neighbourhood.

We should mention specially, that amongst those invited to join the congress, on the same terms as members, are the subscribers to the Architectural Museum. Applications for tickets should be made to the honorary secretaries, at the Architectural Society's rooms, Holywell, Oxford.

AN IMPROVEMENT COMPANY.

IN your article on the "Debatable lands" in last week's *Builder*, the want of some general supervision over the enlargement of our metropolis is manifest; and, as it should be remediable, I submit a plan which I believe to be practical in these times of gigantic undertakings: its insertion in your valuable journal will lead others to improve upon the suggestion, or to introduce something better. I propose that all the freeholders of districts form companies on the limited liability principle, receiving shares in proportion to their property, the property to be managed in the same way as any other large company is. The shares will, no doubt, prove as transferable as the stocks, and benefit the public immensely. I will not enlarge on the subject as your space is too valuable, but the benefits are obvious, and the details easily arranged.

A LONDONER.

THE MIND.

INSATIABLE and inexhaustible,—
Most wonderful art thou, immortal Mind!
To limit thee, thought is incapable:
Ever and ever, fresh realms dost thou find,
O'er which to stretch thy wings; invisible
Thy track, but the results clear, well defined.

If thy long list of triumphs we would scan,
We must go back to the far distant Past;
Must raise our thoughts to the ethereal span,
Round whose bright zone thy girdle thou hast cast,
Drawing her nearer to the heart of man,
Yet leaving half her lore unconn'd at last.

Turn we to earth, with all her precious store,
Rich veins of metals, mines of jewels bright;
Thy guidance taught the strong hand to explore
Her depths, and bring this hidden wealth to light:
And o'er her face glad harvests thou didst pour,
To give man's body food—his soul delight.

Thy power stupendous monuments uprear'd
In ages past, and, though the desert's sand
Long while conceal'd, once more have they appear'd,
Restored to mortal ken by thy command;
And later fanes, whose beauty has endear'd
Them to our hearts, thou'st raised in many a land.

The painter's pencil and the poet's pen,
The voice of orat'ry and ministrelsy;
The sculptor's chisel, the engraver's burin;
Each owes its inspiration unto thee:
And thine the skill to ease the pain of men,
To lighten toil, and life's dull drudgery.

Thou bindest earth, fire, water, and thin air,
The lightning's flash, and sun's fierce scorching ray,
To be thy servitors; and wheresoe'er
Thou issuest thine orders, all obey:
Thou driest rivers—makest gardens fair
To bloom where desolation once held sway.

These be a portion of thy glorious deeds;
And, while we pause in wonder as we count
Thy works, we reverently bow our heads
Before thy great First Cause, th' Eternal Fount,
Whence every brilliant flash of thine proceeds!
And thus, led up by thee, to Heaven we mount.

A CAMBRIDGE COMPETITION.

POLICE STATIONS.

THE magistrates of the county of Cambridge, desiring plans for police-stations and lock-ups, offered by advertisement 10*l.* for the plan that might be selected, the chief if not only condition stated being that each station was not *to exceed in cost* 800*l.* The plan was to be accompanied with "full specifications and estimates," and they reserved to themselves the option of purchasing the selected plan for 10*l.* in full discharge of all claims against them. This was bad enough, but what comes after is worse. The chairman, it seems, had made a set of plans; but finding, as he was to be a judge of other people's work, that this was a wrong move, as he said, he withdrew it. On the 27th, at the adjourned special sessions, three plans from those submitted were laid on the table, and, according to the *Cambridge Chronicle*, were as follow:—

	Estimate.
1. Mr. Gearrard, London (includes stables)..	990 gs.
2. Mr. Hutchinson, Huntingdon (or 700, minus stabling)	800 gs.
3. Mr. Clark, Newmarket	750 gs.

The plan submitted in the name of Mr. Gearrard was really that of the chairman, who confided it to Mr. Gearrard to be worked out in detail.

All the plans above mentioned were severely criticised, and ultimately Mr. Gearrard's (or the chairman's) plan was adopted for the Arrington Division, and that of Mr. Clark for the divisions of Caxton and Bottisham. A margin of 1,050 guineas was allowed to Mr. Gearrard.

It was resolved that the premium of 20 guineas offered for the best design be divided between Mr. Gearrard and Mr. Clark, the chairman saying that if it were considered that he were entitled to any share of the premium, he should present the same to the county!

The chairman, if we are rightly informed, is the county chief constable. If he have any sense of shame, he will commit himself to one of the new lock-ups the moment they are finished. A cooler piece of impropriety we never read of. Architects are persuaded to waste their time to design stations that can be erected for 800*l.* and the committee find out that a plan which will entail an admitted expenditure of 990 guineas is better than those the cost of which were kept within the amount specified—800*l.*; especially, moreover, as it was made by the chairman, and they select that for execution. If such a case as this is to pass without, at any rate, a protest on the part of the profession, it is useless for us to waste ink on the subject of competitions.

We are told that the committee met once, and sent back all the designs but three, the same day, so that the court had no opportunity of judging for themselves.

CHURCH BUILDING NEWS.

Kingston-upon-Thames.—The tower of the parish church is being repaired; the works are being executed under the direction of Mr. W. P. Griffith, the architect for the churchwardens, who have raised the funds by voluntary contributions. The builder is Mr. Patman, of Kingston. About one-half of the tower was rebuilt with brick at the period of the "classic revival;" the belfry windows are Late Gothic, and the angles of the tower are adorned with pine-apple ornaments on Italianized pedestals. These incongruities are to be removed. Some years ago the question as to the safety of the tower was referred to Mr. Godwin, whose report on the subject was printed in one of our early volumes.

Boulge (*Ipswich*).—The church at Boulge has been reopened. This little edifice has been enlarged and "beautified" by Mr. John Purcell Fitzgerald. The building has been restored in accordance with its original style—the Perpendicular. A new eastern front, together with a small side aisle, have been built; the latter divided into two parts, consisting of a vestry, and a recess with sittings for Mrs. Purcell Fitzgerald's family. The eastern wall is of broken flint, with dressings of Caen stone. The work, from the designs of Messrs. W. G. and E. Habershon, has been executed by the contractor, Mr. Stevenson, of Woodbridge.

Bury.—In St. John's church the large three-light Early English window of the chancel has been filled with stained glass, representing the three great closing scenes of the Saviour's sojourn upon earth—the Last Supper, the Crucifixion, and the Ascension. The centre subject (the Crucifixion) is the gift of Mr. Thomas Anderson, of Emmanuel College, Cambridge, as a memorial of the late Mrs. Anderson: the cost of the side lights is to be defrayed by subscription. The subjects, which are taken from paintings by the old masters, are in panels of the angular-vesica form, the remainder of the lights being filled with diapered work, intersected by quatre-foils and lozenges in ruby and blue. The artists were Messrs. Forrest and Bromley, of Liverpool.

Malvern.—A new west window has just been erected in the church of North Malvern, as a memorial of the late Mr. Charles Morris. The new window consists of two trefoil-headed lancet lights, widely separated, with a quatrefoil in the centre above; and between the lights at the bottom is the inscription, on a mural brass. The design of the window consists of four subjects of the acts of mercy, namely—1, Clothing the Naked; 2, Feeding the Hungry; 3, Giving Drink to the Thirsty; and 4, Taking in the Stranger. The south light contains the sentences—"I was hungry and ye fed me: I was naked and ye clothed me." And in the north light—"I was a stranger and ye took me in: I was thirsty and ye gave me drink." The principal figure is an elderly man, dispensing to the necessities of a group of poor claimants in the several ways indicated. The back ground is mosaic and grisaille, in subordination to the principal figures. The quatrefoil above contains emblems of the Trinity. Mr. O'Connor, of London, was the artist. The east window (given by the late Mr. Morris), was also by O'Connor: it is of three lights, with Early Decorated tracery, and represents the Transfiguration. A small light in the north wall of the chancel is to be filled up with a representation of St. Michael, the window being given by the Rev. W. H. Vale.——A parish meeting has been held to enter into arrangements for the purchase of land for the proposed cemetery.

Three acres belonging to the representatives of the late Col. Bund have been chosen, at a cost of 1,100*l.*, independent of the expense of fencing in, draining, and road approaches to it.

Walsall (*Staffordshire*).—The trustees and friends of the Wesleyan Methodists of this place have decided upon erecting a new chapel in Abbewell-street upon a site adjoining the present one. It is arranged for the old chapel to be converted into day-schools for that locality. The probable outlay is 4,000*l.* The work will be carried out under the superintendence of Messrs. Horton, of Wednesbury, architects.

Dewsbury.—A monument has been erected in the chancel of the parish church to the memory of the late Mr. Joseph Crawshaw, and Mrs. Crawshaw, his wife, of the city of York. It is in the Decorated style of architecture, sculptured in Caen stone, and placed upon a ground of polished black marble. It consists of a moulded base, pilasters, and pinnacles on each side of the tablet, which is surmounted by a carved arch. The tablet is of black marble with gold letters, and bears a suitable inscription. The monument is from the works of Messrs. Skelton and Son, York.

Newcastle-upon-Tyne.—The last stone and vane of the Virgin Mary Hospital Church, at Rye-hill, have been fixed in their places. The height of the spire is 177 feet 9 inches.

Gateshead.—On Whit-Tuesday the foundation-stone of a new Roman Catholic church, dedicated to St. Joseph, was laid here. The architect is Mr. A. M. Dunn, of Newcastle; and the contractor, Mr. Hogg. Considerable progress has already been made with the work. "From the nature of the ground," says the *Observer*, "the church is raised upon a stone basement 10 feet above the road, the basement being rock-faced work in straight courses, with chiselled weatherings between the buttresses, and a chiselled plinth above. The superstructure is of 'block in course,' with chiselled dressings to doors, windows, quoins, &c. The church is to consist of a nave 86 feet by 24; north and south aisles, 81 feet by 14½; chancel, 28 feet by 18; together with a chapel of Our Lady and a chapel of St. Joseph, opening into the chancel and aisles by moulded arches, to be filled with richly-carved screen work. There will also be a baptistery, erected upon the foundation of a tower and spire, not at present contracted for, which, when finished, will rise to the height of upwards of 200 feet. The sacristy is upon the south-east of the chancel, connected by a corridor with the presbytery, which will afford accommodation for three priests. A large traceried window of five lights will fill the west end of the nave, above which is a canopied niche for the patron saint of the church, and a bell gable, to contain one bell, surmounted by an ornamental iron cross, the topmost point of which will be nearly 90 feet above the road. The nave is, moreover, to be lighted by a high clerestory of couplet windows in each bay. Corresponding windows, with traceried heads, will fill each bay of the aisles. The chancel is apsidal, with a curved ceiling of wood, divided by mouldings into panels for decoration. The rest of the church will be covered with open timber roofs, dressed and moulded, and stained and varnished. The west end entrance to the church will be reached by a large flight of twenty-two steps, having ornamental railing of stone and iron, with lamps, gate, &c.

SCHOOL-BUILDING NEWS.

Seaford.—The foundation-stone of the new school-rooms and master's residence, about to be erected, partially by private subscriptions and by Government aid, has just been laid at Seaford. The site of the buildings is upon an elevated spot, with a marine view to the south, near to "The Crouch." The estimated cost is 881*l.* and the schools, which are calculated to accommodate about 150 boys and girls, will be in the Gothic style.

Malvern.—The new national schools here are nearly completed, and have been formally opened. The buildings, which are situate in Mill-lane, are of red brick, with Bath-stone dressings, and are in the old English style. They consist of a mixed school for 300 boys and girls, with class-rooms for each sex; an infants' school to accommodate 200, also with a class-room; and two cottages, one for the master and mistress of the mixed school, the other for the mistress of the infants' school. The roofs of the schools and class-rooms are open and ceiled to the backs of the rafters, and the principals spring from moulded and carved stone corbels. A bell-cot terminates the turreted east porch of the mixed schools. The friezes of the fireplaces in the mixed and infant schools are divided into compartments, containing carved groups illustrating Scripture subjects. The carving was executed by Mr. W. Forsyth. The ground in front of the schools is laid out as a play-ground. Mr. Elmslie, of Malvern, was the architect, and Mr. Davis, of the Wells, the builder. Lady Emily Foley presented the site, and the funds were raised by a Government grant of 1,215*l.* and a public subscription, to which the Morris family gave about 600*l.* The building will cost nearly 3,000*l.* There is still a small deficiency to make up.

Leeds.—The foundation-stone of a new school and school-house, in connection with the parochial district of St. Michael, Buslingthorpe, has been laid. The schools are to accommodate 600 children. They are from designs by Mr. Isaiah Dixon, and the style of architecture adopted is Early English. The estimated cost of site and buildings is 1,600*l.* which is to be raised by voluntary subscription, supplemented by a grant from the Committee of Council on Education.

Grantham.—The promoters of the scheme to erect new schools for Castle Gate have accepted Mr. Wilson's tender, and the work is to be commenced without delay. The cost will be about 3,000*l.* Subscriptions and grant from Government of 1,250*l.* have been obtained, and the remaining deficiency is being made up.

BLACKBURN INFIRMARY.

LAYING THE CHIEF STONE.

THE foundation-stone of the Blackburn Infirmary was laid with a good deal of ceremonial on Whitmonday last, and a full report of the whole proceedings appeared in the *Preston Guardian* of the 29th ult. to which we are indebted for the following details as to the building.

The idea of erecting the Infirmary originated with Mr. W. Pilkington, in 1856. Messrs. Smith and Turnbull, of Manchester, are the architects. The general arrangement consists of separate and distinct blocks of buildings, two floors in height, placed alternately at intervals of 20 feet, on opposite sides of a principal corridor, 10 feet wide, which is continued throughout the entire range, and opens at the extremities to gardens. By this arrangement a series of quadrangles are obtained, each 65 feet wide, and having 20 feet of clear and uninterrupted, well-lighted and ventilated corridor space on each side, across which, under all circumstances, a constant flow of fresh air is obtained, and the atmosphere of one ward is effectually prevented mingling with that of another.

The blocks, extending 47 feet at right angles to the principal corridor, contain on each floor a single ward of eight beds (four on a side), occupying the entire width, with five windows in each external side wall, placed directly opposite, and so arranged as to completely separate the beds, and to be at each extremity, above these windows and level with the ceiling (as also to the corridors), are placed permanent ventilation openings, by which means a constant but imperceptible flow of fresh air is obtained in every part of the wards and corridors, the fresh air entering at the windward side and passing out at the leeward side, whereby the foul air is prevented collecting in any part of the wards. The wards are entered from the principal corridor: at the opposite and extreme ends of each ward are situated the patients' bath-rooms, nurses' sculleries, and self-acting water-closets, two to each ward. The closets are the furthest removed and separated from them by double doors and anties, being external on three sides, and so arranged that a constant flow of fresh air is passing through, which at once expels any foul matter arising in them.

In allusion to the novelty and the advantages of the plan adopted for this Infirmary, the *Preston Guardian* says:—

"England owes much to Lancashire. The debt will be largely increased, but gratitude, which taxes no man's purse, can easily discharge the obligation. The building, which partially covers an admitted want long keenly felt by the industrial classes in this division, also supplies a nearly exact model for other parts of the kingdom. Mr. Turnbull, the architect of the building, has sagaciously adapted his edifice to the necessities of various patients. He has availed himself of the labours of Mr. Roberton and Mr. Godwin, who have devoted themselves long and patiently to the exposition of the true theory of hospital architecture. The Blackburn Infirmary will be a blessing to the active community located in its neighbourhood, and, for a reason just stated, a boon to society at large. The country has many specimens of what an hospital should not be: in a few months this county will possess a specimen of what such an institution should be."

Upon the general question we shall shortly have further occasion to speak.

PROGRESS OF WORKS ON THE MADRAS RAILWAY.

SIR,—It is intended to open for traffic another portion of fifteen miles of this line on or about the 15th May (beyond this point no one can form any opinion, at least not under three years, unless the shareholders will look to their own affairs, and send only men who understand the management of works). There are plenty here now who understand how to do the work (if they were allowed to do it); but the Board of Directors have a will of their own: they select boys, and one may say old women from the Cove of Cork, the Highlands of Scotland, the Blue-coat School, and Greenwich-park, and send them to India as railway engineers, without the least qualification, other than it is supposed they are either relations or friends, and have received a lesson before they start in domineering: they are well versed in that.

The cause of the delay is that there are two bridges of twenty-four arches each; they have been commenced more than three years, and are not one-tenth part completed yet.

There are several practical men sent out from England, but, as the engineers cannot supply them with places, they are all placed under the orders of old soldiers, who are either tailors or shoemakers, and never saw a railway before; and the result is, that some take it quietly, others leave for other lines, and some enter the law courts. See Coates *v.* Madras Railway, in the Supreme Court in February, and in which the company had to pay the piper. Mr. Coates built the Painey Bridge, of 56 arches, being the largest in Southern India, and 8 arches larger than the Palor and Gomattim bridges put together; commenced the Palor in March, 1857, after two attempts made by the engineer and failed; by the 12th of August had in the two abutments, twelve piers to span height, and two above ground; but because he would not put up with the boy-engineer's sneers and domineering, he was discarded, and is now building a bridge on another railway.

The progress, since Mr. Coates left the Palor bridge, is as follows:—The works were resumed on the 12th of September by the engineer, and up to this 23rd of April there is temporary sheet piling for one pier nearly completed; and at that rate there being eight more to put in, it will take, for piling alone, sixty months, while December next would have been the furthest, had Coates been allowed to continue, before the train could pass over.

If any of the inspectors complain to the engineer-in-chief of their engineer, they are told that the engineer is responsible for what he does. Now, if such is the case with regard to the inspectors, how stands he with the public and shareholders?—delay, and waste of some thousands in cash.

MY NOTE-BOOK.

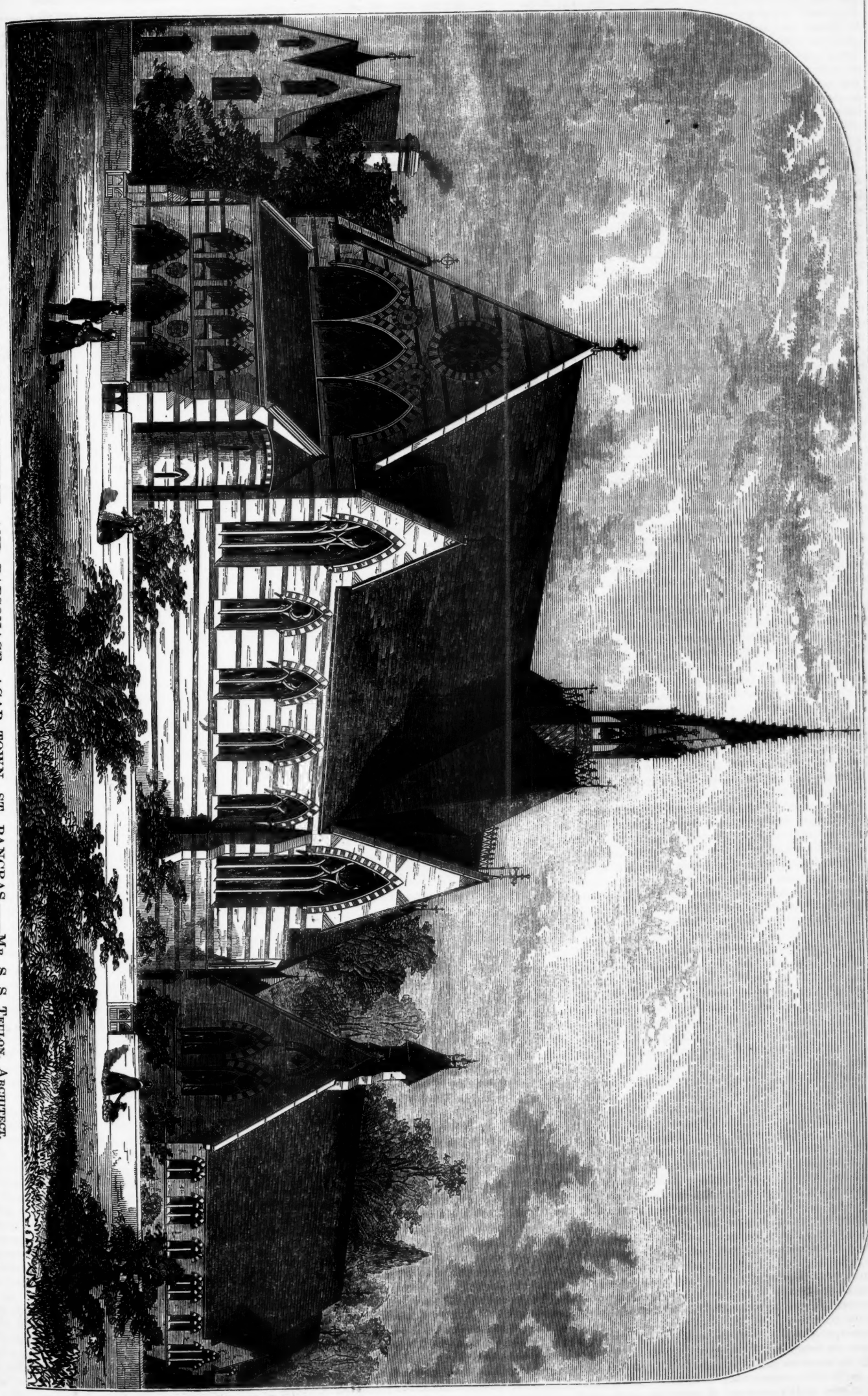
Madras, 23rd April.

SCHOOLS, CHURCH, AND PARSONAGE-HOUSE FOR AGAR TOWN, LONDON.

OUR readers do not require now to be told of the neglected condition of Agar Town. Years ago we drew attention to it, and from time to time since have sought to stimulate those who had the power to remove some of the evils which existed, and to render the houses more fitted for the residence of human beings.* The vicar, Canon Dale, has taken up the subject of building church, school, and parsonage-house there, and our engraving shows the design fixed upon. A beginning has been made with the school, which is so arranged as to answer the purposes of a church also until the church is built. All these buildings are to be of brick with coloured diapering. The interior of the church will be carried out in Huntingdon brick and some other coloured bricks. The construction of the church is as that of the Dominican Church at Ghent, the whole being under one large roof with internal buttresses. There is also a western porch with a gallery over, in effect like a triforium.

The first stone of the school was laid by Lord Ebury, and the school was opened in November last by the Venerable Archdeacon Sinclair. The church will be proceeded with next. Mr. S. S. Teulon is the architect.

* See also "London Shadows," No. 1, York-street.



SCHOOL, PROPOSED CHURCH, AND PARSONAGE, AGAR TOWN, ST. PANCRAS.—MR. S. S. TEULON, ARCHITECT.

THE RENAISSANCE.

To know well and succeed in an art, recourse must frequently be had to its elements and principles. Mouldings are the alphabet of architecture. They are to it what letters are to writing. As by the combination of characters an infinite variety of words is made in different languages, so by the mixture of mouldings one may invent a quantity of different profiles for all kinds of orders, for regular and irregular composition. The orders are the principal ornaments of architecture; and, as distinguishing features, ought to be well proportioned and well executed. The grace and the beauty of edifices are much increased by them, indeed owe every thing to them. They include in their variety of assemblage all that is beautiful and useful in architecture. It is, therefore, necessary thoroughly to understand this subject, and to know how it has been treated, in order to excel in architecture, which derives its beauty, its delicacy, or its grandeur chiefly from the effect of the contours, the relation, and number of its mouldings. The revivers of ancient architecture were fully aware of this. Their elements were the resources of the greatest minds, and they drew from them as from an inexhaustible treasury, producing a variety of agreeable forms and a charming effect of light and shadow. Vignola has been justly considered as the best guide and conductor of workmen in their labours. It is enough to say that he was employed in the court of kings, and succeeded Michelangelo in finishing the design of St. Peter's, Rome. He acquired a reputation above all others by the facility of his rules and the good taste of his profiles, which he has drawn from the most perfect models of antiquity. He chiefly laboured to adjust his mouldings to his proportions, to ascertain the height to be given to certain objects at a certain distance and situation, and the proportions due to all sorts of edifices. For this reason he is reputed one of the best authors who have written upon architecture, and illustrated it with designs, and one of the best commentators of Vitruvius. The perseverance with which he pursued his system, the importance he attached to what are sometimes supposed to be trifles—but trifles, after all, which make perfection—is a valuable lesson to the student.* The precision with which Vignola determines the height of pedestals, columns, and entablatures; the eminent men—some his pupils—who have adopted his measures and imitated his examples of the five orders, are well known: he is allowed by judges to have invented mouldings and profiles, and in every circumstance to have improved where he altered, and to have observed a due proportion among all the parts of the order which admitted of modification, and which, though unlike, and perhaps superior in some respects, to the old style, was so striking as henceforth to be regarded as a new and original one. When he wished, as has been often recorded, to have a Doric order for his rule or model to go by, he took that of the theatre of Marcellus, being the most universally admired for its solidity, its satisfactory effect, its massy and lofty entablature; but when finding from the negligence of the workmen, want of inspection, or some other cause, any mouldings not conformable to the general proportion observed, he would take from other examples of the Doric to supply the places of those which were deficient in that of the theatre of Marcellus. It must be owned that Vignola has, in the composition of this Doric profile, far exceeded the original, having omitted the many trivial, insignificant mouldings with which that is overloaded, and in various other respects improved both its form and proportions. Such is the statement of Sir W. Chambers in notes to his edition of the books of Vitruvius. Chambers himself did not hesitate to vary particular members when observation taught him they might be improved. He also remarks that Vignola, Scamozzi, and others, did not always design and compose strictly in conformity to the doctrine and practice of the ancient architects, but altered certain details and ornaments to suit their architectural purposes. In this they proceeded just in the same way and from the same motive as the ancients did in treating the three Greek orders; the difference of which consists in the proportion of their parts, and in the decoration of their capitals; for the particular ornaments which they gave them, as the triglyphs to the Doric, the dentiles to the Ionic, and the modillions to the Corinthian, not being of an indispensable necessity, they on some occasions did not use them, or they invented new, principally in the Corinthian order. In the Doric the proportions were required to be simple; its solidity rejected all little and delicate ornaments; and in the Ionic, which holds a middle place between the two preceding orders, the architect ruled his genius according to the destination and dedication of the building. And Chambray sets up the composite, which he considers a hybrid, as a beacon for those who are too greedy after novelty, and as an order that has been the cause of all the confusion introduced into architecture, because, far from following the rules of the Grecian order, it presents novelties which the art disapproves. Vignola was deservedly admired for his famous cornice, the model of so many cornices since his time: no one could improve upon it, and many seemed pleased to transfer it from their portfolios to their buildings, for the sake of its fine effect, and being too beautiful to be concealed between two pieces of millboard. The proportions, the composition of mouldings, the sculptured architraves, and other ornaments of his doors and windows, are very beautiful,—things which one loves in his leisure hour to pore over. Daviler, in his comparison of the works of Vignola and Michelangelo, gives a number of different details from the two examples, both reduced to the same module, contrasting one which is perfect, simple, and unostentatious, with another which is defective, overstrained, or excessive; so that by comparing these specimens, the difference is seen between the two. It is indeed pleasant and useful to examine the designs of great rival artists, thus brought into juxta-position; to discern their respective merits; to see which has used his powers to the best advantage, and for what reason one claims our admiration more than the other.

The student may learn from them the value and importance of these mouldings to architecture; the different ones that are employed for different kinds of orders and compositions, so that they become characters by which to judge what country and age produced them: he will see that they were all formed upon the nature of geometry—upon the rule and compass, and are not arbitrary as some have supposed; that the most beautiful sections are least charged with mouldings, or least repeated, but are mixed alternately with square and round, or composite, but especially that there are always small ones between the great, to give value by comparison; that every part is of the size suited for the use and end for which it is destined; that the principal members of each order have few parts, and greatness of manner is preserved; that the projection of the cornice is proportioned to its height; that one member of it is a foil to set off another; and that the one the most essential reigns dominant over the whole. Chambray thought Vignola very exact in his profiles, and very judicious in his proportions; superior to Serlio and many others. Alberti was then, as now, an authority for construction and the art of building. Of Scamozzi he says, he did not design with so much grace as Palladio. His manner is dry, his ornaments badly selected, his taste is bad,—nevertheless, he was very regular in his proportions.*

The differences which are found in the works of each of these eminent men are worth seeing and knowing, for the purpose of guiding our choice and fixing our taste. Palladio was the only architect in the north of Italy whose simplicity of style approached the most perfect models of antiquity. He was well imitated by Inigo Jones. He has left us an excellent collection of plans and sections of all sorts of ancient buildings, well drawn, and measured with great care. He is always correct and elegant, as much, if not more so than the other restorers of ancient Roman architecture. His general dispositions are often happy; his outlines distinct and regular; his forms graceful: little appears that could with propriety be spared, nothing seems wanting, and all his measures accord so well, that no part attracts the attention in prejudice to any of the rest. Scamozzi, in attempting to refine upon the style of Palladio, has overdetailed, and rendered his own rather trifling—sometimes confused. Vignola's manner, though bolder and more stately than that of Palladio, is yet correct, and curbed within the limits,—particularly in his orders; but in Michelangelo's we see licence, majesty, grandeur, and fierce effort extended to bounds beyond which it would be very dangerous to soar.† Sansovino's mode of treating the extremities of his façade of the library of St. Mark's, Venice, is original, simple, and beautiful. It was nothing difficult to solve, but the ancient Doric not having been treated so before, it was looked upon as something extraordinary. In ancient examples of this style the entablature invariably ends by a demi-metope. But Sansovino, in treating the angles of this edifice, lengthened the entablature, and, widening the space, gave the metope in full at the angles instead of having it a half metope; thus heightening the beauty of his design, and giving greater breadth and solidity to parts which required them. A very great improvement was made here by most simple means. Modern Rome, with all its ruins and magnificent fragments of ancient architecture, is yet disfigured by many vices, especially in the ornamental parts of its public and private edifices. Michelangelo, with all his greatness and genius, has by no means left in doorways and windows which he executed, examples to be imitated. And the Fontana, Borromini, and Bernini of the Eternal City, although celebrated names, were architects remarkable chiefly for the eccentricity and extravagance of their conceptions. But those who knew the reasons and the motives for everything that was done by the ancients in their orders; who carefully studied the details, with pencil always in hand; who felt the incessant pains and applications to which they must submit in order to attain success; who knew the principles upon which a race of intelligent beings built structures, which have been the admiration of all mankind; who, not content with ready-made rules derived from the most approved specimens, sought the principles which made those rules, and solved the most difficult problems of architecture; who, by calculation, knew the best means and materials of construction, and all the data and formula necessary for building well; who mastered the most interesting questions relative to the laws and regulations of that science; who could do everything demanded by their employers, and compose plans and drawings according to the projects proposed, so as not to deceive or compromise the interests of the parties; who could discern at a glance the true from the false, and had the compass in the eye for justness, proportion, and symmetry;—raised themselves and their profession to a level with the ancients whom they imitated, and carried the art by new combinations to a further perfection. To seize the fine skill that formed the orders, to take them for models, imitating them in their great characteristics, yet altering or modifying their details, and improving their profiles; shifting a member in one part of an entablature, where it might be spared, to another part where its effect told; to discover a mode of describing curves, the spiral of the volute the swell of the column; to produce pleasing, yet necessary novelty to meet new demands and different circumstances, showed an originality before which the dull and servile task of copyism sinks into insignificance. The men who thus followed the bent of their own genius, and were gifted with an enthusiasm for art, which to them was a second nature, could not slavishly copy and trace the manner of another, however perfect it might be. Original minds will differ in respect of what they make beauty to consist in, and each may be right to some extent, and each attain his end if certain terms are not exceeded. What some esteem rich and delicate, others think small and confused. Perrault was disposed to value the style of Louis XIV. above that of Pericles and Augustus; a sentiment that perhaps was in accord with the distinguished *clique* of the French artists of the sixteenth century, who have left evidence that, though the art was imitative, their object was to create beauty. If sometimes they did not succeed in departing from rules and authorities that had been scrupulously observed before, and which fashion had sanctioned, they had compensation to offer in the new route which they opened, in the new resource and fresh aspect which rose out of their innovations. To these men of fertile and brilliant imagination, architecture, in the liberal expansions and developments which it received, owes much. It was with them a happy presage and foretaste of what was afterwards to be accomplished by others when the age was more decided, when the art was more understood, when commerce had discovered natural and artificial productions before unknown; when artists, and all who honoured and enlightened their country, were at a higher premium, and more patronage given to architecture and the arts connected with it. These pioneers, whilst they preserved the primitive character of monuments which the united judgment of all mankind had approved, adopted one in conformity with the national spirit which acquired for it a similar fame. It was impossible in the nature of things for architecture to resist the powerful influence of the manners of the court, the system of government, the effect of literature on society in improving their condition. The contemplation of works of the most skilled

* Daviler's Architecture de Vignole et M. Ange.

* Parallèle de l'Architecture antique et la moderne.

† Sir Wm. Chambers's Treatise on Civil Architecture.

artists, possessed by princes having wealth to command and reward them, purified taste and diffused it till it became general, and everywhere excellent, because modelled from that belonging to the aristocracy, which was excellent,—pre-eminently so in the time of the style of the Renaissance in France, when in such works it eclipsed all Europe. The copying with intelligence what was fine was of some use to accustom the eye to form, to inspire noble ideas, and to give to the hand facility of execution. This might be only mechanical after all; one the copy of the other. But to imitate the principles, the taste, and the manner, is neither to copy the work nor the artist. Admiring, therefore, and studying a work as a model chosen out of many, the revivers of ancient art yet showed, by their manner of rendering it and adapting it to circumstances, that they were men of free and independent minds; but this did not prevent them paying deference to the standard works of antiquity. Their success even, the fruit of great precautions and solid judgment, may teach those whose ambition leads them to stray, the danger of transgressing rules and breaking through the restraints imposed upon all. To hold them in contempt will lead only to extravagance of conception, and is not a proof of genius,—at all events not of good taste. The art asks so much toil, such continual striving, to know always how much good may be done, what is good to do, and what it is to follow Nature, to see and learn from her the principles of order, convenience, fitness of things, harmony, and elegance, which art, an imitatress of Nature, should imitate, that the labour of a life is often insufficient for the purpose: it would be better to pursue our course on principles which are fixed and always the same —like the laws of the Medes and Persians,—better to distinguish our work by something true, agreeable, and simple, instead of something extraordinary, capricious, confused: it would be better and safer, for the student at least whilst in a state of pupillage and separated by a long interval from the great restorers and professors, to remain in that state a little longer if he would guarantee his design against failure, and not incur censure by attempting what he cannot perform. It is the gifted only who can produce sure and satisfactory effect from themselves, and without any assistance from other sources—an effect which is neither attributable to the compass, nor to be tested by a measure: an emanation of pure genius, it is a splendid exception to ordinary rules, and a delight for the eyes of the true connoisseur. The generality are in the habit of consulting principles before they undertake a design, weighing and deliberating upon every work they do, and trusting for success to the mechanical instruments they use. It belonged only to geniuses of the highest order, to those who carried the art to the same elevation as did the Greeks and Romans,—to the Vignolas, Palladios, Scamozzis, and to those who resembled them, to exercise a perpetual sway in the vast domain of architecture. We have endeavoured to show that the proper way of exploring and imitating the ancient monuments is not by merely retracing their designs, or by reproducing them, but in thoroughly understanding the reasons of their proportions, the causes which enabled them to arrive at such a degree of perfection; and in applying the rules of ancient art to the wants and to the requirements of modern usages, and taking advantage of mechanical improvements. The great artists of the *cinque-cento* period exercised their influence upon the taste of all Europe, by their ingenious manner of applying these rules, and sometimes producing a grace beyond the reach of these rules. There is, perhaps, no other country where the arts of design have offered the most varied phrases, and the most contrasted characters; indeed, it has been thought that the French are apt to degenerate, for want of constancy in their tastes and principles. Among them the beautiful and the new often dispute the pre-eminence. The sixteenth century—the age of Germain Pilon, Jean Goujon, Ponce, Cousin—was a great epoch of artists; and a French writer, J. P. Brès, says that there was not wanting among them, either the study of form, the expression, or the finish which increases the perfection without injuring the effect; but what was wanted was perhaps a more happy selection of forms, and that grace which cannot be attained but by a most profound study of the chief works of the Greek artists. They certainly, however, carried some parts of sculpture to the highest degree of perfection; and visitors and artists, in Paris, often go to see and admire Goujon's groups of figures in the façades in the court of the Louvre, and other parts of this celebrated palace, the works of the ancient masters of the Renaissance. Some of the old royal castles of France,—such as Chambord,* the façade of Blois, and others, are worth seeing as specimens of this style; and anterior specimens, showing the passage from the last stage of the Gothic to the first attempts of the Renaissance. In the fifteenth and sixteenth centuries, when classical architecture was revived, and reappeared with the new taste that had sprung up with it, all the edifices of that epoch presented a reminiscence of the ancient style: but, at the same time, a host of ingenious, clever artists lived, and produced a school, in which the system then inaugurated was infused with the elements and inveterate habits of the ancients. These intelligent minds gave to the pretended or assumed imitations of ancient edifices an air of forms absolutely original. Many different motives are assigned for this peaceful revolution in the human mind: but the great cause of the modification of the architecture in France was the absolute inutility of the fortified cities in the interior of the kingdom, and the reduction of the nobility to the obedience of a sovereign was not slow in obliging it to change its adventurous and turbulent life to another kind of life very different, which consisted in frequenting the court, the source of all favours, and to enjoy its great benefits.† We will now conclude with merely referring to some edifices in the style of the Renaissance in other countries. It was not till after the coronation of James I. in 1608, that Oxford exhibited the first attempts at this style. Witness the treatment of the five orders, piled one above the other, in the façade of the University College, a practice of Inigo Jones, after Palladio. The banqueting-house, Whitehall, is an instance of this. An example of employing columns on a larger scale of a single colossal order, and a bolder or more severe style, is seen at St. Paul's, Covent-garden. The tombs of Queen Mary and Elizabeth, in Westminster Abbey; the chapel of Bishop West, in Ely Cathedral; and front elevation of Longleat, at Audley End, and other noblemen's villas, are in the Renaissance style;—in Rome, a great number of mausoleums; the Loggia of the Vatican; the court of the Tribune of the Belvedere; the Palace Giraud, and the Chancellerie; besides a number of churches and palaces.

F. L.

* A very majestic edifice. Ducerceau gives it in his interesting work. By some attributed to Primatrice, 1532.

† Album du Château du Blois; restauré par Duban, architecte, 1851.

LONDON AND THE LOCAL PRESS.

So unwieldy has the metropolis become, that it is scarcely possible in any single book of moderate size to convey an adequate historical or descriptive account of the numerous and vast localities, some of which are remarkable for time-honoured associations, and some for the peculiar manner of their rapid growth and the interesting literary and other associations of more recent years.

In the time of honest John Stowe—even in Strype's days and in those comparatively later ones of Pennant—London was of such an extent that it might be grasped by the historian: it is now, however, no longer possible to keep a general account of London, within anything like convenient dimensions: it is therefore of the greatest importance that the districts of the metropolis should be dealt with separately. In order to meet this want local historians have done useful work in collecting and publishing the materials connected with Bermondsey; St. Giles in the Fields; Mill-wall and the Isle of Dogs; Islington; Clerkenwell; Lambeth, and some other districts. St. Pancras, with its immense population, and other larger districts, still remain without chroniclers, and this is the more to be regretted in consequence of the circumstance that many important particulars which are at the present time accessible, will, without record, be forgotten. In the provinces, most of the towns of importance, such as Shrewsbury, Chester, Birmingham, Newcastle-on-Tyne, &c. have had careful historical notice, and it seems wonderful that neighbourhoods like St. Pancras, whose population is much greater than that of most of the places mentioned, should have been so long neglected. Surely there would be enough patronage in these districts to afford sufficient remuneration for such works. Much might be done in the various metropolitan districts by the formation of local historical societies. Our object, however, is at present to direct attention to a new literary feature which the great increase of the extent of this immense city and the removal of duties have brought into use and notice: we allude to the local Newspaper Press, which is doing good, and we may particularly point to Clerkenwell and Islington. The *Clerkenwell News*, which we believe is the oldest of these publications, contains, with a supplement, thirty-six closely printed columns of matter: eighteen of these consist of advertisements, which are entirely of local interest, such as houses and apartments wanted or to be let, servants wanting places and mistresses servants: the public institutions give notice of their meetings, and the various tradesmen, school teachers, &c. &c. use this vehicle for the purpose of advertising. In the other parts are careful reports of the various parish boards, statements of accounts, the reports of the medical officers, &c.; and undoubtedly the publication of the speeches in the vestry affords a great deal of useful information to the public and is also the means of improving the proceedings of those upon whom so much the health of the London parishes depends. The condition of the ragged schools and other similar institutions which require support is kept before the public, and the sanitary neglects of the neighbourhood are constantly more carefully noticed, than it would be possible in journals of a more general character. From time to time, there are also given notes of antiquarian interest and discussions of matters which particularly concern the community. We have for some time noticed this publication, and find that it is conducted with ability and in the spirit of fair play. This local print, which being sold for one halfpenny, finds its way into the hands of a large number of working men, is undoubtedly one of those instruments which the large size of the metropolis has rendered necessary.

ARCHITECTURAL PUBLICATION SOCIETY.

ON Friday, 28th May, the Annual General Meeting of the subscribers was held at the rooms of the Royal Institute of British Architects, Grosvenor-street, Mr. Sydney Smirke in the chair, to receive the report of the committee on the general affairs of the society, together with the receipts and expenditure for the past year.

Mr. W. PAPWORTH read the report:—

IT said, *inter alia*:—"In the last report it was stated that Part I. for the year ending 30th April, 1856, comprising letter C to the word Chamber, had been issued. Since then the preparation of the articles included in the remainder of letter C has been taken in hand. Their publication, however, has been retarded by many causes, some beyond the control of the committee, and others arising from the nature of the undertaking, and the care bestowed on revising the text. The committee have, however, the pleasure to announce that a copy of Parts II. and III. completing the letter C is laid on the table, and that next week these parts will be in course of delivery to the subscribers. The whole number of pages occupied by the letter C is 181: 170, it may be remembered, were delivered of the letter B, and 156 of the letter A.

This increase in the quantity of text has been mainly occasioned by not incurring the expenses of so large a number of woodcut illustrations as were used for the two previous letters. Some regret has been expressed at the absence of such illustrations; but it has appeared to the committee inconvenient to increase the time necessarily occupied in the publication of each letter by the addition of large or minutely-detailed woodcuts, the expenditure for which would materially lessen the funds available for the text.

With respect to the progress of this portion of the Society's works, the committee would impress on the attention of the subscribers that the greater portion of the labour of producing the dictionary may be considered as overcome. The number of articles under the letters A, B, and C, as shown in the 'List of Terms,' comprises one-third of the quantity contained under all the letters of the alphabet; and it is believed that the articles comprised under most of the remaining letters will require comparatively far shorter time for preparation, and less actual inspection of original authorities, as the dictionary itself has now become a work of reference for the remaining articles. It is, indeed, to this verification of authorities, and to the care bestowed by the gentlemen who devote their time to the revision of the articles, that much of the delay in printing off the sheets must be attributed: it should be remembered, however, that these 'labours of love' for the undertaking have materially increased the value of the work.

As some illustration of the attention paid to the subjects treated in the dictionary, it may be mentioned that several experiments have been *made*

by individual members to test the accuracy of the statements in the articles submitted to their consideration.

Another of the Society's years having commenced from the first of this month, the committee are prepared to begin their labours. As yet, the funds are, of course, not in a state to guarantee the committee from the responsibility of debt. For the works of the current year (ending 30th April, 1859), it is proposed to change the plan of confining the letter-press and the plates to individual years, and to prepare as large an amount of illustrations and text in the letters D, E, and F as the income will permit. Thus the plates and the letter-press will appear together, an arrangement which it is believed will be more satisfactory to the subscribers, and which, it is hoped, will prove to be an assistance in forwarding the dictionary to its early completion.

Most of the members are no doubt aware of the objects proposed to be accomplished by the formation of the Architectural Union Company. As our Society forms one of those, connected with the profession, which it is the purpose of the company to assemble under one roof, your committee have notified to the directors of the company their desire to rent one room to contain the papers of the Society, the stock of letter-press, and the sets of the year's works, which necessarily increase year by year, and now occupy a considerable space in the house of the honorary secretary, and are not protected by insurance. At present the directors do not feel themselves in a position to inform the committee of the terms on which such a room can be obtained.

In conclusion, the committee have much pleasure in observing the favourable notices of the illustrations which have lately appeared in the architectural press; but they would request the attention of the subscribers to the statements therein made, that the body of the profession does not respond to the exertions and labours of the Society, exemplified by the fact that not half the number are enrolled of those who should constitute the list of subscribers. Many gentlemen, promoters of our objects, and amateurs, have expressed their opinion that the operations of the Society would be materially aided if a guarantee could be given for the completion of the dictionary. But as its completion rests mainly upon the subscription-list being continued at least in its original amount, the committee feel it imprudent to undertake any such guarantee. Could they, however, calculate with certainty upon the same number as at the commencement, some undertaking might then be given that the dictionary would be completed within a stated period. While carrying on this important work with the present small number of subscribers, they must regret that the quantity of matter issued annually is necessarily only half that which the promoters hoped to have had the gratification of placing on the table at these annual meetings."

The chairman, in proposing the adoption of the report, said that from the earliest formation of the Society he had felt a deep interest in it, and had continued to watch its progress with anxiety and, generally speaking, with perfect approval. Without going into details, he thought it was his duty rather to invite the expression of opinions or suggestions that might be of advantage for the advancement of the Society; although, on an annual occasion like that on which they were assembled, he thought it was important that they should consider their course of action for the future with a view to improvement in their prospects; for there was no denying that their course had not been so animated, and that their pace had not been so quick, as they had originally expected; and therefore he held that any suggestion calculated to quicken their pace and improve their position should be received with gratitude by the committee. The individual interest of every member of the Society was identical with that of the Society itself; and they could not take any step in promoting its prosperity without promoting the professional, and he might say their own pecuniary, advantage. The larger their funds the quicker would be their pace, and the quicker their pace the sooner would the payment of their annual subscriptions cease, and place them in possession of a series of volumes of the greatest utility and value. The proposal, made in the report, of indexing the existing portion, would, he thought, tend to utilize it and be calculated to produce a favourable impression on the architectural public; and the intention announced in the report, of publishing cotemporaneously the text and illustrations, would also be received with great favour by the architectural public. In conclusion, he would urge on them that the great aim in view was to complete their important undertaking as quickly and successfully as possible.

Mr. J. Thomson seconded the adoption of the report and it was carried unanimously.

Mr. Hussey then moved, and Mr. Brightsmith seconded, a vote of thanks, to the committee, treasurer, and local hon. secretaries, for their valuable services during the year, and requesting a continuance of the services.—Carried unanimously.

Mr. Williams moved a vote of thanks to the hon. secretary, Mr. W. Papworth, for his valuable services, and that in furtherance of the recommendation contained in the report, Mr. Newton be requested to accept the office of joint hon. secretary, and Mr. Hansard that of examiner of illustrations.

Mr. Kerr said he should have preferred seconding a special vote of thanks to Mr. Papworth, without other names being mixed up with the resolution. All who knew the working of the Society, knew that Mr. Papworth's services were of the most valuable and unremitting nature; and they were, moreover, rendered in that unobtrusive way that made them still more valuable. He thought that stronger efforts should be made to increase the numbers of the society, and he believed that 500 copies of their works might be produced at a cost but slightly more than 250 were now produced at. Without wishing to say that the Society was at all falling off, he desired to add his voice to that of the chairman in impressing on the profession and the professional press, in the strongest possible language, the desirableness of increasing a Society which belonged to no party, professed no peculiar sympathies, and whose only object was the advancement of art. They had now been engaged for ten years in this work, and he believed the names of the committee were a sufficient guarantee that the work would be carried out safely in the end. That was the great point. They might not be very showy people, or attempt to make a great stir, but he thought the Society was calculated to confer the most permanent and valuable advantages on the profession in the long run.

The resolution was put and carried unanimously.

Mr. Cates proposed a vote of thanks to those gentlemen named in the report, who had placed their collections and original sketches at the disposal of the Society; and to Mr. Octavius Hansard and Mr. Lewis, for their kind services to the committee in the illustrated portion of the dictionary, and in the preparation of drawings. He thought that the works recently issued by the Society bore evidence of its increasing usefulness and prosperity.

Mr. J. Papworth said the zeal these gentlemen had displayed, and the handsome way in which they placed their portfolios at the disposal of the Society, entitled them to the warmest thanks.

The resolution was put and carried unanimously.

Mr. Hansard returned thanks, and said, with regard to the plates in the present number they were now giving half a guinea's worth, or, a half-year's subscription. There were, he found, seventy-six subjects and nineteen plans, making ninety-five different subjects, in the number, and he thought no one could complain of the quantity given for their money. There were many members who said "We have many things in our portfolios, but they are not worthy of your work." This, however, was a mistake; for, however small and unfinished, or however large their contribution might be, photographers could now deal with it prior to its going into the hands of the artist. He would therefore urge on subscribers to send in their drawings, though the committee would not guarantee their publication, because that would depend on the numbers sent in; but out of the present list now sent out there were forty subjects given, and although issued a couple of months, not more than three or four letters had been filled up in the portfolios—D and E.

Mr. Aitchison moved, and Mr. Cates seconded, thanks to Messrs. Snooke and Thomson, auditors, and requesting Mr. E. H. Martineau and Mr. J. Whichcord, to accept the auditorship of accounts for the year ensuing. Carried.

Mr. J. Papworth proposed, and Mr. A. Morant seconded, on which it was carried, that the best thanks of the Society be given to the Royal Institute of British Architects, for the use of their rooms for meeting in.

Mr. Nelson moved a cordial vote to the chairman for presiding.

The chairman, in acknowledging the compliment, regretted that he could not take a more active part in the transactions of the Society. At all events, they would have his best sympathies and assistance—he would not say to the letter Z—for he was afraid he should have but little chance of enjoying the reading of that article.

ARCHITECTURE AS A FINE ART.

SIR,—I should feel obliged by your permitting me to call attention to a few considerations which have suggested themselves to my mind relative to the above subject.

I must first say that I consider nature to be the basis of all fine art, because it appears to be the only true resource to which we can go, and the only certain authority to which we can appeal for the purpose both of attaining and judging true excellence. This may be discarded by many who would set up their own taste and reason as the standard of merit, but I merely ask whether the wide diversities of opinion which exist upon some of the most simple cases of artistic skill do not prove that human judgment is no criterion of this kind of perfection?

With regard to architectural art, I cannot but think that all modern and ancient buildings are more or less imperfect, both artistically and constructively; and I am persuaded that this arises from not paying any, or a proper amount of, attention to the corresponding examples presented to us by nature. I will endeavour to point out the chief of these defects, for such I think they are.

1. The habit of placing columns where they have nothing, or a very indequate weight, to support. This, I am sorry to say, is very common. It is entirely opposed to all mechanical and artistic science, and is, in fact, so ridiculous that I much wonder that it can be tolerated, and that common sense should not convince every architect how preposterous is such a sight. They can never, when thus situated, appear ornamental, because the inconsistency produced draws off all attention from the mere inert beauty of the object itself.

2. The ornament applied to the rectangular and angular projections of walls, by which they are dignified by the name of pilasters, is productive of a very ruinous effect, because it deceives, by making these square buttresses appear to act as pillars, which every one who looks at them knows is not the case.

3. The use of broken pediments is a great fault; as is also their application to doors and windows. A pediment is a crowning member, and is only intended for the summits of buildings. The same applies to round pediments. These members cannot be broken without producing imperfection, because they suggest a complete idea, which is that of finish, and hence, when broken, fail to impress the mind with this notion.

4. The improper use of cornices. A cornice, like a pediment, is a crowning member, and consequently should not be stuck anywhere; nevertheless it is often seen half-way up a building, appearing ridiculous as having no meaning.

5. The use of unnatural ornament I maintain to be truly barbaric. Such stuff as we find attached to some of our buildings is a disgrace to the term. All ornament should be representative of nature. Triglyphs, whether real or imitated, are altogether abortive as far as ornamental capacity is concerned. The same may and must be said of mutules and dentils. The Corinthian modillions are superior, and why? Simply because they embody a natural curve: they somewhat resemble natural objects, and I hold (and I defy any one to refute it) that architectural ornament is such just as far as it resembles nature. If unnatural it is unornamental. How beautiful is the Corinthian capital! It is a copy of nature,—hence I am at no loss to account for its beauty. It is impossible for any one to supersede, or even equal in invention, the natural types of beauty which lie around us.

The use of both animal and floral sculpture is good; nevertheless the Greek pseudo-lion is a great absurdity. Such a figure is not the imitation of anything real—it is quite a fanciful idol—and as an architectural ornament is to me unbearable. The use of bull's-heads shows a very depraved and sensual taste, and the expression which they give to a building is anything but enviable, consequently such vulgar and selfish pretences to ornament should be set aside as being utterly unworthy of preservation, even with all the sanction of antiquity. The Doric fret is a very lame apology for ornament,—in fact, no ornament at all; and, although superior to it, the Ionic anthemion is not the best by any means that might be made use of. Most architects seem to imagine that symmetry is a necessary element of perfection, whether artistic or otherwise, but this is a great mistake. Nature exhibits comparatively little of symmetrical arrangement; thus, the branches of trees and the leaves of plants do not present a symmetrical arrangement; and I think, therefore, that it is absurd to suppose that floral ornament should present the appearance of servile regularity and uniformity. Let our architects wreathe the flowers of nature (not imagination), and place them upon our edifices: let them also take of the riches of animal nature, and then might we expect to see such architecture as we now look for in vain.

6. A great fault of some buildings is their top-heavy appearance. Now, I do consider that this is the case with the Ducal Palace, Venice, notwithstanding what has been asserted to the contrary. The lofty wall, which is even with the lower arches, gives it this appearance; and even if it had been set back, I doubt whether, on account of its solidity, this injurious effect would be much increased. There is an appearance of top-heaviness about St. Michael's Church, Cornhill; and I am persuaded that this, in the present case—yea, always—arises from the custom of making the tops of buildings the same size as their bases. This is, of course, not perceived unless the buildings are tolerably high, and so does not affect domestic architecture. The Egyptians knew better than to fall into such a mistake; and I cannot but think that the grandeur of their temples arose from the adoption of one of Nature's rules, which is, never making the base of any object so large as the top. It is a universal principle, for we never see trees whose tops are

equal in diameter to their bases. Although the Greeks rejected it for the *contour* of their buildings, they made use of it for their windows; and otherwise than referring it to nature, as I have done, the beauty of these members is inexplicable.

J. A. D.

A COVERED PLATFORM.

HIGHBURY-BARN TAVERN.

In the gardens attached to Highbury-barn Tavern, a covering to a portion of a large dancing platform, denominated "the Leviathan," by the proprietor, Mr. Hinton, has been recently put up. An area of about 4,000 feet is covered by this structure. The platform beneath this building is raised 2 feet 6 inches above the level of the other portion of a monster platform, and it is so arranged as to be entirely independent of the iron fabric itself, inasmuch as the piers and plates which support the former have no connection whatever with those which support the latter: it was considered necessary to accomplish this, so that the vibration caused by dancing should not be likely to interfere with the main structure. The roof is supported by cast-iron shafts, about 3 inches in diameter, resting upon cast-iron pedestals: these shafts are 12 feet 7¾ inches long, and rest upon a plate 8 inches by 8 inches, supported by 14-inch brick piers, worked in cement, and built upon a concrete foundation. From the tops of these shafts, above the capitals, spring three perforated ornamental cast-iron brackets, two of which support the gutter, which forms a fascia to the building, while the third performs a similar office to the pagoda-formed front which surmounts the gutter, and is decorated through its whole length with circular scollops. The building is 24 feet in span, and the roof is supported by wrought-iron tie-rods, ¾-inch in diameter, from shaft to shaft, securely bolted to the cast-iron rafter-shoes, which are fastened to the tops of the shafts. Struts, ⅝ of an inch in diameter, support the T iron rafters, 2 inches by ⅝ inch, and these again support angle iron purlins, of the same dimensions as the rafters. Mr. James J. Laforest was the architect, Messrs. Cutler and Sons were the contractors.

LEGAL NOTES.

Joint-Stock Company Shares.—One of the directors and promoters of a company took, in 1851, 500 shares in order to enable the company to be registered; calls were made on these shares, and at a meeting of the directors by a resolution, seconded by this director, his shares were declared forfeited and shares bearing the same numbers were issued to other persons. It has been held by Vice-Chancellor Kindersley that this director was still liable as a contributory in respect of those shares. In the same case it appeared that at a meeting of directors, a sum of money was voted to this director for introducing a new manager; and in consideration of an equal sum this director was declared free from all liability as to the forfeited shares; it was, however, held by Vice-Chancellor Kindersley, that he was still liable as a contributory in respect of those shares. —*In re the London and County Insurance Office.*

Bankruptcy—Lien on Goods.—The Master of the Rolls has lately decided a very important question in Bankruptcy. A Mr. Hoggard acted as manager in London of the Glasgow house of Macdonald and Co., which became bankrupt last October. Mr. Hoggard accepted bills for the accommodation of the firm, and these bills were paid regularly till the bankruptcy took place when there were outstanding acceptances of Mr. Hoggard to the amount of 14,000*l.* The goods in London belonging to the firm were at the time of the bankruptcy of the value of 50,000*l.*, and Mr. Hoggard claimed a lien on these to cover his liabilities. The Master of the Rolls has held that the property consigned to London was in the "order and disposition" of the bankrupts and belonged to the trustees under the Scotch sequestration, and that the same was the state of the law with respect to the rights of assignees if the case were an English bankruptcy.—*Hoggard v. Mackenzie.*

Private Way — Obstruction.—The Court of Common Pleas has lately decided the following case:—The plaintiff had the use of a private way to Hanwell Asylum, and one night, when driving to the asylum, his vehicle was overturned by some slates which the defendant (a contractor engaged in the erection of certain buildings) had placed on the private road. The defence was, that the defendant had lawfully placed the slates on the road by the license of the owners of the land. The jury, however, held (and this view was unanimously held by the court on a motion in arrest of judgment) that the defendant was liable for the injury done to the plaintiff, as he was bound to place some signal near the slates, to show that the road was not free from obstruction.—*Crosby* v. *Hill.*

The Powers of District Boards.—A case has lately been decided in the Court of Queen's Bench, which shows that district boards possess very extensive discretionary powers. The facts were these. The Wandsworth District Board of Works made an order directing the overseers of Putney to raise certain sums off certain lands for the purpose of the Metropolis Local Management Act. The land in question was alleged not to be within the Act, and it was contended that it derived no advantage from the objects for which the rate was made. It was a piece of land occupied by the Middlesex Waterworks Company. The Putney overseers assessed the company, and the company applied to the Wandsworth board to lessen the rate, or to agree on a case for the Court of Queen's Bench. The board refused to take either course, and the company came forward to ask the court to compel them. The court held unanimously that it had not power to issue any compulsory order to the board, which possessed full discretionary powers, under the Metropolitan Local Management Act.—*In re the Wandsworth District Board of Works.*

CONTRACTORS' CASE AT DUBLIN.

A TRIAL, involving a comparatively small amount of money, but of some interest to contractors and others, took place in the Court of Queen's Bench, Dublin, on Friday, May 28th, Judge Perrin presiding.

Messrs. Burgess, contractors for the new lighthouse now erecting at Rockabill, on the eastern coast of Ireland, defended a claim for 46*l.* odd, made by Mr. Cunningham, quarry proprietor, at Dalkey, for forty-nine stone steps, delivered at the building. The plaintiff, by his foreman, produced a model of the steps, and proved that they were executed in exact accordance with it; alleging that the model was made strictly according to the directions of one of the defendants, and approved of by him, until he subsequently discovered the steps, as constructed, did not admit of sufficient overlap, and then directed an additional piece of 1 inch to be added to it, and the work to proceed according to such amendment.

The plaintiff stated that the dimensions given by Messrs. Burgess were as follow:—2 feet 6 inches in length (independent of 9 inches for tailing in), 7¼ inches high, 7½ inches wide at narrowest part, and 12¼ inches *at line of wall.* The sketch of the defendant, though entered in the plaintiff's foreman's book at the quarry, was not forthcoming, and he relied on recollection. On the dimensions the chief point turned; for the defendants swore that the order they gave was for steps of the length above described, but 1 foot 2¼ inches at wall-line, instead of 12¼ inches; and the steps being constructed to the *latter* dimension, they could not execute their works according to the instructions of the engineer. They (defendants), however, alleged that the forty-nine steps were allowed by them to be delivered at the lighthouse, although known to be erroneous, and payment consented to be made for the same, if no objection were offered to their being put in the work. Twenty steps were worked in, and for *that* number the defendants lodged a sum of 27*l.* in court as the full value. Much contradictory evidence was adduced.

The judge summed up, but left the case entirely to the jury, who, after some delay, found a verdict for the plaintiff for the full amount claimed.

Counsel for the plaintiff, Messrs. O'Hagan, Q.C. and Hamerill; for the defendants, Messrs. Clarke, Q.C. and Lynch.

RECENT PATENTS.*

J. H. JOHNSON.—*Improvements in Apparatus for testing the strength of Materials.* (A communication.) Dated June 24, 1857.—This consists in employing gearing and mechanism for applying strains or forces, in combination with a piston operating against a body of water or other fluid contained within a cylinder, so that on applying the strain to the object to be tested such pressure shall be transmitted to the fluid in the cylinder, and thence to an indicating apparatus in connection with the same.

A. V. NEWTON, London.—*Wrought-iron Beams or Girders.* (A communication.) Dated October 24, 1857.—Wrought-iron girders are usually made in the form of an I. In making such girders it has been customary to build up a solid pile of rectangular section, by laying a number of flat bars or strips of iron, one on the top of the other. The present invention consists in forming the pile of two flat pieces or bars of about double the width of the upper and lower flanges respectively.

C. FLETCHER. *Improved Machinery for making Bricks, Tiles, and other Articles of Clay or Plastic Materials.* Dated June 20, 1857.—This consists in adapting to the feeding part of the machinery rollers, provided with sliding pallets, which are made to move radially from and to the centre or axis of the rollers as the latter rotate in their bearings. The rollers or cylinders are provided with flanges, whereby the clay or plastic material is prevented from being squeezed out laterally.

R. MALLET. *Improvements in Tiles and Coverings for Roofs and other parts of Buildings.* Dated June 24, 1857.—The patentee constructs roofing tiles of metal or glass, or of pottery, of a square or lozenge form, adapted for being placed diagonally on the roof, and susceptible of various ornamental and other combinations.

HENRY WIMBALL, Aldermaston, Berkshire.—*Apparatus for the manufacture of Bricks, Tiles, Pipes, and other Articles of a similar nature.* Dated October 19, 1857.—This invention mainly consists in the employment of pug mills with two or more shafts and sets of knives. These shafts are geared together, and consequently rotate in opposite directions, and as the die or orifice for the passage of the clay is placed between the shafts, the clay is more readily and freely forced out than when the orifice or die is situate immediately opposite the shaft of the mill.

WILLIAM PADGETT, Poole.—*Earthenware Pipes for Drains and Sewers.* Dated October 29, 1857.—The welts or annular convex projections at the ends of the pipes or tubes do not take any bearing upon or against the interior of the annular recesses within which they are placed, but only upon or against the clay, or plastic, or other material within which they are imbedded, and the sides of the pipes or tubes bear upon, or come in contact with, annular rims or fillets within the collars, each of which has within it one such rim or fillet at each side of its annular recess, so as to connect and hold the pipe ends securely together.

CHRISTOPHER CRABB CREEKE, Bournemouth, Hants.—*Earthenware Pipes.* Dated September 30, 1857.—Instead of making the pipes of equal thickness throughout, the patentee proposes to flute them; or by other sectional forms (which may be varied at pleasure) to give their outer surface such corrugations or flanges as will increase considerably their strength without materially adding to their weight, and parallel with each other, thus enabling the manufacturer to produce them with facility and economy. The junction of the pipes is made by forming an annular groove at each end of the tube for the purpose of receiving one half of a projecting flange or metal ring, which must be perfectly imbedded with red lead or other suitable putty or cement worked into the annular grooves at the ends of the pipes, and after bringing the end surfaces of the pipes into close air-tight contact, by having their surfaces ground and prepared with the putty or other suitable cement or composition.

J. LLOYD.—*Improvements in utilizing and deodorizing Sewage Matters of Dwelling Houses and other places, and in Apparatus to be used in connection with the same.* Dated June 26, 1857.—This consists in applying the waste of fireplaces, alone or in combination with lime, to correct the nuisance produced by the sewage of houses, especially by human excretions, and thereby reduce them to a harmless state, so as to be easily removable with such refuse, and so to be used as manure. The patentee proposes to use inside of closets, and beneath the seats, metallic or other pans of sizes convenient to be introduced, and removed therefrom, and through passages, &c., when full.

W. E. NEWTON.—*Improved Machinery for cutting Files.* (A communication.) Dated June 22, 1857.—This consists in a mode of operating the cutting chisel in file-cutting machines, for the purpose of producing a uniform depth of cut from end to end of a file.

T. SPENCER.—*Certain Improvements in the Purification of Water and other Fluid and Gaseous Bodies.* Dated June 19, 1857.—This relates to the purification of water from any tinge of organic colour or deleterious gaseous body by treating it with an oxide of iron.

* Selected from the condensed lists published in the *Mechanics' Magazine* and *Engineer* journal.

Books Received.

Cosmos: Sketch of a Physical Description of the Universe. By ALEXANDER VON HUMBOLDT. Vol. IV. Part 1. Translated under the superintendence of Major-General EDWARD SABINE, V.P. and Treasurer, R.S. London: Longman and Co. and Murray. 1858.

In this volume, Humboldt, having already treated of the heavens, begins to speak of the earth in its cosmical phases. Magnetism and the reaction of the interior of the earth on the exterior, as in volcanoes, constitute the subjects chiefly treated of; and to these are appended the author's notes, and those of the editor.

Although neither recommendation nor specimen of Humboldt's "Cosmos" is called for from us, we extract the following curious passage, as bearing on a subject recently alluded to in the *Builder*, namely, the probable existence of a force antithetical to light, and which manifests itself chiefly in darkness; as shown in certain photographic phenomena connected with engravings. In treating of the aurora borealis, and of certain highly favourable opportunities for watching its peculiarities in the extreme north of Scandinavia, enjoyed by several distinguished physicists for eight months uninterruptedly in 1838-9, Humboldt says:—

"I would direct the attention, in the first place, to the dark misty wall which rises gradually on the horizon, and is called the 'black segment of the aurora borealis.' The blackness, as Argelander remarks, *is not a result of contrast*, for it is sometimes seen before the luminous arch begins to bound it: it is a process going forward in a part of the atmosphere, for hitherto we have had no evidence of any admixture of foreign matter causing the darkness. The smallest stars are perceived by the telescope in the dark segment as well as in the coloured and bright parts of the fully-developed aurora. The black segment seems to be much more rare in the higher than in the middle latitudes. . . . Even out of the segment there appear, although rarely, *black rays*, which Hansteen and I have more than once seen stream upwards. Together with these there appear roundish black patches, enclosed by luminous borders, to which Siljeström has given especial attention. Also, in that rare phenomenon the aurora corona, which, by the effect of linear perspective projection, corresponds in altitude to the magnetic inclination of the place, the middle of the corona is mostly of a very deep black. Bravais regards both this and the black rays merely as optical effects of contrast."

Contrast will not explain the black border before the luminous arch begins, however, as remarked; and is useless, therefore, either as a general explanation of the blackness, or a special explanation of the black rays and black coronal centre. The whole subject reminds one of the unaccountable black patches in the midst of diffused "star dust" in certain portions of the starry heavens beyond our own firmament, the milky way; and the phenomena in both cases appear to corroborate the idea of the operation of a principle antithetical to light.

Miscellanea.

BLACKET'S PATENT INACCESSIBLE LOCK.—To obviate the access of burglars and lockpickers to safe-locks, either by boring tools, or by pick-locks or skeleton keys, an ingenious invention has been patented, by means of which any lock, and we presume almost any good iron safe of ordinary construction, may be greatly increased in security. By this invention, the boring of safe doors is rendered useless altogether to the burglar, while the lock is so placed as to present a formidable obstacle also to the use of pick-locks. The lock, of whatever kind, is affixed to the back of the safe, which is inserted usually into a wall, and not to the door at all, and is reached by the "key," or ward-traversing bit, through a tubular keyhole attached to a partition running through the safe from front to back, and containing a rod which acts the part of a handle to the "key," but never entirely quits the tubular keyhole, although it can be drawn backward and forward for the insertion and withdrawal of the "key" or bit. The keyhole is thus always occupied by the rod, or handle, which may be massive enough to move the stiffest or most ponderous lock, such as cannot be tickled by the usual picker or skeleton key, even were it introduced. The lock acts at the back on an apparatus which catches the safe door by means of teeth both above and below, so that the usual tactics of the skilled lock-picker and burglar appear to be foiled.

BRICKMAKERS' STRIKE AT BROSELEY. — The strike among the brickmakers, occasioned by the employers having reduced the price of making bricks from 3s. 6d. to 3s. 3d. per thousand, after continuing nearly three weeks, has terminated. The men have accepted the reduction, including one penny in the shilling for making cress, &c.

PURIFICATION OF IRON ORES.—Mr. Bessemer, says the *Mining Journal*, appears again in the field as a patentee, in connection with the production of iron. The specification of a patent for a method of purifying iron ores has just been issued to the public, and was probably directed towards remedying the defects of his method for converting pig-iron into malleable iron. As regards the separation of sulphur and phosphorus, it was rumoured some time since that considerable expectations were entertained as to the efficacy of this method of purification of iron ores; but since the patent has not been proceeded with, it may be inferred that these expectations have not been realised, or that the invention is not novel.

GAS.—The governors of the Middlesex County Lunatic Asylum, at Colney Hatch, are about to have put up an apparatus to cook by gas for *fifteen hundred persons* daily. Mr. James Sharp, engineer to the Gas Works at Southampton, according to the local *Independent*, has been employed to advise them on the plans and construction. Drawings and specifications will be submitted to several manufacturers, who will be invited to tender for the manufacture and fixing of the apparatus.——At the annual meeting of shareholders in the Burslem and Tunstall Gas Company, the report stated that, notwithstanding the depression of trade, the extension of the company's business had gone on without interruption. The new purifying apparatus and buildings had been completed, and it was anticipated that the large tank and gas-holder now in course of construction would be completed in time for the ensuing winter. A dividend at the rate of 7½ per cent. upon the old shares and 5 per cent. upon the new shares was declared.

HER MAJESTY'S VISIT TO BIRMINGHAM.—Preparatory to the opening of Aston-park by her Majesty, on the 15th instant, numerous decorations are being got up, chiefly from designs supplied by architects and others. The Aston-park Company have obtained a design for the arch to be erected over the entrance-gates of the park, from Mr. Steeple and Mr. Joseph Allen. Mr. Yeoville, architect, has prepared one for Colmore Row, comprising three Gothic arches, the whole to cost 50*l*. For the embellishment of Ann-street, nine designs were submitted, and one by Mr. Bishop, including a triumphal arch, was chosen; the cost to be about 85*l*.,—already subscribed. A project for the adornment of Bull-street, by Mr. Cresswell, at a cost of 180*l*. has been adopted. A very general desire prevails that the decorations should be allowed to remain till the 17th, or over the market-day, as many country people, not in town at the opening, would thus have an opportunity of seeing the decorations.

THE NEW BARRACKS AT GOSPORT. — This extensive range of buildings, now in course of construction at the top of the town, by Messrs. Lucas, Brothers, of Lambeth, is progressing rapidly, so that the whole pile (according to present calculations) will be ready for occupation at the end of the year. The soldiers' barracks is a block about 700 feet long and 75 feet wide, containing forty barrack-rooms, 50 feet by 22 feet, each of which rooms is intended to accommodate twenty-five men; twenty ablution rooms, 20 feet by 10 feet; two cook-houses, four sergeants' quarters, with latrines and other conveniences. This building will thus house 1,000 rank-and-file, while upwards of 500 cubic feet of air will be allowed to each man. At the north-west corner of the soldiers' barracks will stand the canteen, a building not yet commenced: in the bastion at the back a "fives" court has been erected for the use of the soldiers, which is 55 feet long, 30 feet wide, and 26 feet high. The guard-house is ornamented with a clock-turret of Portland stone. The guard-room contains, in addition to guard-room and cells for the refractory, court-martial and orderly rooms. The officers' quarters extend about 440 feet by 61 feet, and afford accommodation for forty officers. The mess-room is on the first floor: its dimensions are 50 feet long, 28 feet wide, and 15 feet high; the ante-room to it, 40 feet long, 20 feet wide, and 10 feet high: kitchens, offices, larders, cellars, plate-closets, &c. are also provided, adjoining it. The non-commissioned officers' quarters, workshops, infants' and adult school-rooms, library and reading-room, are contained in one block, 250 feet long by 62 feet wide. Each non-commissioned officer is to have two rooms, 12 feet by 11 feet, and 11 feet high. The married men's quarters are 230 feet long by 60 feet, for sixty married couples. Each man has one room, 11 feet by 13 feet, and 11 feet high. A small building for a laundry, with a drying-ground adjoining, completes the range as laid out at present.

REFLECTION ON GLASS CASES IN MUSEUMS.—During several visits to the new gallery of objects of art I have experienced some inconvenience from the reflection of the windows on the plate glass cases. From some points of view the windows and the trees outside present a picture which prevents any artist who may be sketching from properly seeing the objects beyond: even when the blinds of the windows are drawn down the evil is not remedied. I have noticed the same unpleasant effect in other galleries which are lighted at the sides instead of the roof. Would it not be possible, instead of having the cases perpendicular, to arrange the glass at such angles as would enable a person, when sitting or standing, to sketch the objects without being troubled by the reflections? —AN ARTIST.

ELECTRO-TELEGRAPHIC PROGRESS.—The *Agamemnon* and *Niagara* are by this time, doubtless, in the Atlantic Ocean, where the purpose is to rehearse the subsequent laying down of the Atlantic cable. For this preliminary operation twenty miles of cable have been shipped, besides the line to be permanently laid. The ships have also on board the paying-out machinery and steam engines for lifting the cable if requisite. It is hoped that the whole work will be completed by the end of the present month.——Mr. Layard, of Nineveh celebrity, writing to the *Times* as to the merits of the proposed telegraphic communication with India, gives preference to the Red Sea line, for practicability and safety; and he ought to know something as to the danger of laying a line *vid* the Euphrates and the Persian Gulf. The coral reefs in the Red Sea, however, are regarded as a special danger in the way of the line *vid* that sea.—— Mr. Henry, patent agent, Fleet-street, has just specified, on behalf of an American, some improvements in protecting telegraphic wires. It is proposed to cover the wire, enclosed in its insulating coating of gutta percha or India rubber, with an exterior protective casing of lead or other ductile metal, applied by a process in which the caloric from the hot metal is intercepted, and prevented from reaching and destroying the gum coating, by a current of fluid interposed between the metal and gum as they are moving towards a die where they are to be united; by the time of reaching which a proper relative temperature is to be secured between them. The apparatus preferred consists of a combination of tubes, with a die and hydraulic press.

SCHOOL DESIGNING AT WAINFLEET.—A correspondent, Mr. Spreckley, a builder, complains of treatment he says he has received in regard to certain school plans which he was employed to prepare by "the architect," a cabinet-maker, to whom a local clergyman had entrusted the erection of National Schools at Wainfleet. After detailing some procedure in regard to the appointment of a good customer of the cabinet-maker as contractor, an appointment resolved upon, it is alleged, before the advertisement calling for tenders was issued, the complainant goes on to say that he was refused all compensation for his plans and had to sue "the architect," against whom he got a verdict of 7*l*. for "about twenty sheets of drawings, four lots of specifications, some of them twenty pages of foolscap filled, and other details and estimates," all regarding an outlay of 903*l*.; and that what with law expenses, loss of time, &c., he had but a few shillings left for his trouble. As our correspondent's letter, however, would be a libel in law, we cannot publish it as he desires.

MODEL DWELLINGS AT BOMBAY.—The movement in favour of improved dwellings for the working classes is extending far and wide, and now we have before us a prospectus of a "Bombay Mechanics' Building Company, under the Limited Liability Act; capital, two lakhs of rupees, in 4,000 shares of 50 rupees each." This company has been formed for the purpose of providing comfortable and healthy dwellings for mechanics and other Europeans of a similar class, who are at present compelled to inhabit inferior houses in unhealthy localities, at high rents. The undertaking is said to be cordially approved of by the governor and the members of council, and the local government have offered an eligible site in Mount-road, near Byculla station, on favourable terms. An elevation and plan accompany the prospectus, from which it appears to be intended to erect a large building in form of a square, and divided into flats, with a cooking establishment apart in the centre of the square, surrounded with baths. The elevation is castellated, and has not quite that unsightly, workhouse-like aspect, which the patrons of model dwellings in London seem to think good enough for the industrial classes.

SOLDIER WORKMEN.—A number of soldiers are now occupied at the camp of Sothonay, near Lyons, in constructing, under the direction of the engineers, a number of barracks, the walls of which are made of earth mixed with chopped straw. The sides of the doors are faced with stone, and those of the windows with wood. This mode of construction is to replace that of planks, and will have the advantage of being warmer for the troops in winter and cooler in summer.

BUILDINGS IN MANCHESTER.—The total number of buildings in Manchester on the 29th of September last (according to one of the miscellaneous police tables) was 71,249. They are classified thus:—Cotton mills, 94; silk mills, 11; worsted mills, 2; smallware mills, 14; printworks, 5; dyeworks, 33; hat manufactories, 11; machinists' premises, 62; foundries, 52; leadworks, 4; paperworks, 4; saw mills, 52; corn mills, 13; miscellaneous workshops, in various trades and manufactories, 1,213; warehouses, 1,753; dwelling-houses, 56,942; shops used as dwelling-houses, 6,615; shops not used as dwelling-houses, 777; places of worship, 130; public and private schools, 283 (many of the schools are included with dwellings, places of worship, and public institutions); barrack, 1; banks, 11; markets, 11; theatres, 2; railway stations, 8; gas stations, 3; workhouses, 2; infirmary, fever hospitals, dispensaries, 6; night asylums, 2; lock hospital, 1; penitentiary, 1; public institutions, 13; public buildings, 35; baths and washhouses, 9; breweries and distilleries, 193; slaughter-houses, 144; buildings used as offices, 598; livery stables, 59; miscellaneous buildings, such as sheds, &c., not used as workshops, 2,080.

STATE OF CROYDON THEATRE.—A somewhat eccentric circular has been printed at Croydon, advising the inhabitants as to church-rates and poor-rates, and as to the advisability of avoiding any meetings, on these or other subjects, held in the old Croydon playhouse. The galleries and staircases are said to be alarmingly unsafe. "I have indeed, lately," says the writer of the circular, (which is signed "Joshua Beardmore"), "strengthened and supported the most threatening parts of the horrid *suspension* staircase, but still I find, *from the survey of an architect*, that deaths and broken limbs or fractured skulls must occur in case of a panic..... This Croydon dangerous old structure I have tried to close by legal means, but found it was beyond the interference of magistrates, from being situated outside of the limits of the Metropolitan Building Act."

ROYAL IRISH ACADEMY.—His Excellency the Lord Lieutenant of Ireland attended a meeting of this body on Monday evening, 24th May, and the chair was taken by the president, the Rev. Dr. Todd, S.F.T.C.D. The president entered into a brief history of the "Cunningham prizes," which they had assembled to see presented; and stated that they were medals, four in number, and for the periodical awarding of which Mr. Timothy Cunningham, of Gray's-inn, London, who died in 1789, left a sum of 1,000*l*. It was suggested by Dr. Aquila Smith, that each medal should bear the name and portrait of the recipient, and an inscription, stating the reason for which it was awarded. The medals are of gold, and are given this year to the following gentlemen, respectively:—To E. J. Cooper, M.P. for Sligo, for his "Catalogue of Ecliptic Stars;" to the Rev. G. Salmon, F.T.C.D. for his treatise on "Higher Plane of Curves;" to the Rev. Dr. Wall, for his work on "an important subject in Hebrew literature;" and to the Rev. Dr. Reeves, for his translation of "Adamson's Life of St. Columbkill." His Excellency addressed the meeting, and said that, "in his opinion, of all sciences, astronomy was the highest;" and concluded by moving a vote of thanks to the president, which was seconded by Sir William Hamilton.

FEVER AND AGUE IN ISLINGTON.—Dr. Ballard, the officer of health of Islington, in a recent report, remarks that in his district, during the four weeks which ended on the 1st of May last, there have been two deaths attributed to diarrhœa, and six to fever; and although in neither of these two cases has the mean of the two last years been exceeded, it is worth while to remark that "one of the deaths from fever took place in one of the only two houses in Pulteney-terrace which has been exempted from the orders of Sanitary Committee for the Improvement of Drainage, &c. in 1856." Dr. Ballard does not refer to the state of the drainage of the other houses, in which the deaths from fever took place; but it would be well worth while to do so in all cases of fever and other preventible complaints, whether they may occur in the houses of the poor, or in those better circumstanced.

HYDRAULIC CEMENTS.—A paper on this subject has been submitted to the Academy of Sciences by M. F. Kuhlmann, showing the advantage that may be derived from the combination of silicates with mortars and cements in general, and especially with those that are intended to resist the action of sea water. It is well known that the first effect of water on cements is that of forming hydrates; after which a gradual contraction takes place, producing a degree of hardness, which increases in proportion as the contraction is slower and there is more silex or alumina in the cement. Now, M. Kuhlmann has observed that if alumina or its silicate, or else magnesia, whether caustic or carbonated, be kneaded into a paste with a solution of silicate of potash or soda, the compounds resulting therefrom will bear a perfect resemblance to the natural silicates,—such as feldspar, talcous slate, magnesite, &c., and will, by repose and slow contraction, become hard and semi-transparent, resisting in a high degree the corrosive effects of water. If slaked lime be added to the said compounds, they acquire the properties of hydraulic cements. M. Vicat, jun., having shown that calcined magnesia added to a cement would resist the action of sulphate of magnesia, M. Kuhlmann has endeavoured to turn this observatien to account, by mixing calcined dolomites (which contain magnesia) with mortar, with the addition of alkaline silicates. This composition he finds very advantageous, since most of the salts contained in sea water must contribute towards the preservation of such cements. In fact, the chloride of magnesium, as well as the sulphate of magnesia, will be decomposed and form a layer of silicate of magnesia on the surface of the cement: in the same manner, the sulphate of lime must, being in contact with the silicate of potash or soda, form a silicate of lime; and all these silicates strongly resist the action of sea water. As for sea salt, which is a chloride of sodium, M. Kuhlmann proves that, in the proportion in which it exists in sea water, it will slowly decompose the silicate of potash contained in the cement and leave the silex free. The compositions proposed have therefore the singular property, not only of resisting the corrosive qualities of sea water, but of actually becoming more insoluble the longer they are in contact with it. A cement composed of 30 parts of rich lime, 50 of sand, 15 of uncalcined clay, and 5 of powdered silicate of potash, is recommended by M. Kuhlmann as having all the requisite hydraulic properties, especially for cisterns intended for spring water. In marine constructions care should be taken to add an excess of silicate to those portions of cement which are exposed to the immediate contact of the sea.—*Galignani's Messenger.*

ROME.—The *Giornale di Roma*, of May 1st, describes some interesting discoveries made by Signor L. Fortunati in excavations *coraggiosamente* carried on by him in the *Via Latina*, two miles from Rome. These include a quadrangular sepulchral chamber in the form of a cross, presenting in the vaulted ceiling paintings and reliefs in stucco. In the stuccoes we see represented the Judgment of Paris; Achillas at Scyros; Ulysses and Diomede with the Palladium; Philoctetes at Lemnos; Priam before Achilles for the ransom of the body of Hector; and finally Hercules, who is there perhaps in connection with the capture of Troy. In the centre, Jupiter is represented borne by an eagle, with a thunderbolt by his side; and in various compartments are different divinities and combats of Centaurs with wild beasts, and vignettes painted in the midst, which render the effect of the stucco yet more wonderful and beautiful. In the midst of this chamber there is a large sarcophagus of *marmo Greco*, divided inside in two parts, to receive two bodies. It is about 13½ palms long. Around it lie nine other sarcophagi, without any order, three of which are of the finest workmanship, and in wonderful preservation.

SCHOOL OF ART FOR BANBURY.—Several gentlemen have joined themselves into a committee, and obtained the use of the British School at Banbury, where a drawing class has been started, under the superintendence of Mr. Stanley Reeves. There were forty-two pupils in attendance. So soon as the school is perfectly organized, it will be placed in connection with the Government Department of Science and Art.

KNIGHTSBRIDGE BARRACKS.—We some time since drew special attention to the state of these barracks. It now appears that scarletina has broken out there, and that an entire family of four children have been cut off, one after the other, by this disease. Surely something will now be done ere matters get from bad to worse, as they are but too likely to do in the present hot weather.

THE LABOUR QUESTION.—You will not, I trust, consider it a vain repetition, if I again call the attention of your readers to the desirability of societies being formed for the improvement of towns, upon which subject I wrote to you a few weeks ago. I am induced to do this, as there appears to be some interest taken in the matter, and the only hope we can have of seeing anything done of a practical nature, is to keep the subject before the public ere that interest ceases. Your correspondent, Mr. S. E. Miles, has exposed some of those great evils which might be remedied by that public spirit which I have more than once before now advocated; and in your correspondent's last paragraph but one, mention is made of improvements being wanted in the country, as well as in towns. Now, this want, together with the want of employment among farm labourers, might be remedied by a society being formed in each county town, for purchasing and reclaiming waste lands. Surely shares in a company of this kind would be worth having, while the existence of such a society would bring wealth into the town where its meetings were held. Societies for the improvement of the metropolis and other large towns might be made self-supporting by the sale of shares, and would save much trouble to the Government, and expense to the public purse. I hope some of your correspondents will continue to keep these matters before the public, and that your journal may be the means of remedying the evils above alluded to, as it has been with regard to many other evils.—W. SCARGILL.

SCRAPS FROM ADELAIDE, MELBOURNE, AND HOBART-TOWN.—The opening of the Gumeracha bridge over the Torrens, in South Australia, took place on the 12th of February last. It consists of a single arch of timber, supported on stone abutments. The span is 100 feet. The plan was furnished by Mr. Ashwin, chief draughtsman to the central road board, and the work was executed (under the superintendence of Mr. Alfred Hardy, superintending surveyor of the north-eastern district) by the contractors, Messrs. T. and J. Baker, of Adelaide, who had already erected the bridges over the Light, the Wakefield, the Angus at Strathalbyn, the Onkafaringa at Greenthal, and several others. The road between the bridge and the chain of ponds is not yet completed, according to the *Adelaide Observer*.—Another bridge, the Virginia bridge, built over the Gawler river, was opened about the same time as the preceding. It is a bowstring bridge, with two roadways, supported at each end by piles, and gives a waterway of 100 feet. The design was prepared by Mr. Macaulay, the superintending surveyor of the central board of main roads in South Australia. Mr. S. Wastell was the clerk of the works, and Mr. Pitman the contractor.—From the *Melbourne Herald* (Victoria) we observe that an advertisement was issued on the 2nd of March last, calling for competitive designs to be sent in by the 20th of April, for a new banking house in Collins-street, for the London Chartered Bank of Australia; premiums 150*l*. and 100*l*.—Hobart-town, the capital of Tasmania or Van Diemen's Land, appears to stand much in need of water supply. The climate is very dry, and the state of the town rivulet, according to Dr. Hall's health reports, is such, that the drainage is very defective, and the consequence of this and other causes is that the mortality of the town is about 28 per 1,000, a mortality exceeding that of London. Dr. Hall has shown that in so healthful a climate the mortality ought to be no more than 17¼ per 1,000, by the adoption of by no means extraordinary sanitary measures, such as the formation of an adequate water supply. The lives of 200 persons, out of a population of about 18,000, might thus be annually saved in Hobart city and Launceston alone.

LAYING THE FOUNDATION-STONE OF ST. JOHN'S CHURCH, PUTNEY, BY THE BISHOP OF LONDON.—Wednesday, the 26th ult. was the day fixed for the performance of the above interesting ceremony, and there was a large assemblage of ladies and gentlemen. The freehold site was very liberally given by J. Temple Leader, esq. and who also contributed the munificent sum of 2,500*l*. The church will be in the Early English Decorated style, from the design of Mr. Charles Lee, architect. The exterior is to be of Kentish rag-stone, with Bath stone dressings, and calculated to hold 500. The height of the spire is to be 160 feet; total length, about 110 feet; width, 50 feet. The bishop, after going through the formula, delivered one of those eloquent addresses for which his lordship is so well known. The stone was then laid in the usual manner. The building is being erected by Messrs. Aviss and Sons, of Putney, and the cost is estimated at 4,529*l*.

DRURY-LANE THEATRE.—CHEAP MUSIC.—After what we have written elsewhere in our present number, it is scarcely necessary to say that the endeavours which Mr. E. T. Smith is making to supply the public with good music, at so low a rate as to bring it within the reach of the humblest, has our heartiest support. On Wednesday last, Verdi's opera, "Rigoletto," was produced, the well-known tenor, Naudin, making his first appearance here, in the part of the Duke, and the other parts being supported efficiently by Sig. Mattioli, Made. Fumagalli, and Made. Borchardt. The representation was exceedingly successful. Naudin established himself as a favourite, and the choruses were effectively given. If such a performance, at such prices (ranging from 6d. to 4s.), be not warmly supported, it will show little appreciation on the part of the public of spirited efforts for their amusement.

THE NORTHERN DRAINAGE OF THE CITY OF NORWICH.—The Board of Health, says the local *Chronicle*, has determined to carry out the plan, if such it can be called, for the drainage of the north side of the city, without its main feature—the deposit bed for the sewage. Now, all the sewage is to go into one part of the river, close to the Cow Tower, to be a great nuisance there, and thence to pollute the whole course of the stream, making it, in fact, a stinking ditch, unfit either for purposes of navigation or pleasure, and injurious to health. The river is polluted enough already by the sewers from the south side of the city, and by the abominations from fellmongers' yards and dye-houses, but these sewers, &c. are widely apart. The contractors for the first scheme have given notice to the Paving Committee of suing for penalties on account of the delay. Better give them the 20,000*l.* intended to be spent, for nothing, than for making the river ten times more polluted.

THE METROPOLITAN MAIN DRAINAGE.—At a special meeting of the Metropolitan Board of Works, held on Wednesday, Mr. Carpmael moved a series of resolutions; but after some discussion, and the moving of an amendment by Mr. Doulton, the whole matter was adjourned till October next, the Board being desirous of further information on the subject.

WINDOWS.—I observe in many houses of modern erection, that light is admitted in the front by one central window, seven or eight feet wide, divided by stone uprights into three equal compartments. This has a very elegant appearance, and answers well the purpose of throwing light into the centre of the room. But it is open to one objection, which I think a rather serious one. In case of *fire during the night* the aperture between the stone uprights is so narrow, that a very lusty person, or one not very active, would find it difficult to escape through the window.—SPECTATOR.

WATER GLASS, OR OIL OF FLINTS, AND ITS APPLICATIONS.—In consequence, chiefly, of the article in our columns of 5th December last on this curious and interesting subject, water-glass has already come into extensive use, so much so that "Metropolitan Water Glass Works" have been brought into operation at Eastcheap, and we have before us a tract issued from that establishment in recommendation of the article, and giving information as to its varied and numerous uses,—as a cheap and good substitute for oil and varnish, glue, cement, soap, starch, &c. &c. and as a preservative against atmospheric influences, moisture, and fire,—for stone, which it silicates and hardens, —for brickwork, compost, clay, chalk, wood, paper, cloth, metal, glass, and other substances. Amongst its more recent applications it has been used as a glaze for earthenware, free of lead, and as a cement for broken articles of earthenware, glass, &c.: in calico printing and dyeing it has also been used; in the removal of old fresco paintings; the preservation of walls from damp; in cementing gas, water, and steam pipes, combined with whitening or manganese; for coating metals, and iron ships; preserving timber, roofs of houses, theatrical decorations and dresses, hangings, &c.: in short, it bids fair to rival gutta percha and India-rubber as a Proteus.

PLANS SUPPLIED TO A SURVEYOR.—At the Wolverhampton County Court, an action, Manton *v.* Fereday, was brought to recover 8*l.* 13*s.* for drawing plans and specifications, the plaintiff being Mr. Manton, a draughtsman, and defendant, Mr. Fereday, surveyor. From the statement of Mr. Manton it appeared that in 1856 defendant was employed as surveyor by the Local Board of Health at Wednesbury, and entered into an agreement with plaintiff for the drawing of certain plans, &c. for which plaintiff was to be paid at the rate of two and a half per cent. Plaintiff also supplied defendant with three mounted plans, with plaintiff's name attached, which were to be hung in defendant's office as a kind of advertisement for plaintiff. Defendant, however, had effaced the name of plaintiff, covering it with his own name, and had also made certain marks which led plaintiff to suppose that defendant had used his specimen plans professionally. Under these circumstances plaintiff made a claim of three guineas, the value of the plans and of arrears of commission for work done. For the defence it was contended that the plans were sent by plaintiff with an understanding that there was to be no charge for them. The marks were descriptive, and made in presence of plaintiff. Defendant admitted his liability for commission to the amount of 1*l.* 7*s.*—one and a half per cent. —which amount had been paid into court. The judge having ascertained that the specimen plans had not been rendered useless by the effacing of plaintiff's name, gave a decision for one guinea, in addition to the amount paid into court.

ACCESS TO HYDE PARK.—On all sides of the park we find that wickets have been liberally opened at the ends of leading streets: since the improvements in plantation, this indulgence has been liberally conceded by the late efficient chief commissioner, and in some instances, as at the end of Brook-street, a wicket has been opened within one hundred yards of Grosvenor Gate. At the south side, on the contrary, the park is closed against the termination of the Great Exhibition road, which is the direct approach from Brompton and other very populous districts. At the end of this road we have to turn out of our way three hundred yards, either to Prince's Gate on the right, or to the late Count d'Orsay's wicket on the on the left—this latter entrance being now obvious to nothing but the temporary park paling-fence of the gardens of promise. We peripatetics, who range the loved flower-walks with our children, having no communion with commissioners, implore of you, Mr. *Builder*, to lay our case before them, and to procure for us the indulgence of direct entrance to those little civic Elysiums which the late commissioner projected and completed evidently for our recreation. Such a short cut will lessen the toil of approach, and extend our rambles of enjoyment in the floral borders.

"—— NOBIS HÆC OTIA FECIT."

[ADVERTISEMENT.]

86, Regent-street, June 2, 1857.

Messrs. CLARK and CO.

15, Gate-street, Lincoln's-inn-fields.

GENTLEMEN,—In reply to your inquiry as to my opinion of your Shutters and other work, I beg to state that the Brass Front and Stall-board Plates you made for me I think equal in finish, and, indeed, altogether such as are not to be excelled by any other in London; they wear well, and I think the colour of the brass is excellent. As to the Shutters, it is now eight years since they commenced work, and I believe 20*s.* will cover all charges for repairs during that time. They do, and have worked well during all that period, and I believe them to be as sound now as on the day they were fixed.—Yours obediently,

JAMES MEDWIN.

TENDERS.

For the erection of sundry new buildings at the Britannia Iron Works, Bedford, for Messrs. J. and F. Howard. Mr. R. Palgrave, architects. Quantities by Messrs. Balam and Lee:—

Holland	£5,704 0 0
Carter	5,375 0 0
Myers	5,370 0 0
Colls and Co.	5,224 0 0
King (Bedford)	5,088 0 0
Freshwater (Bedford)	4,780 0 0
Holme (Stafford)	4,600 0 0
Thompson (Derby)	4,289 0 0

For additions to a factory, with an Elizabethan flagstaff tower, for Messrs. J. and W. Lambert, Nottingham. Mr. R. Clarke, architect, Nottingham. Quantities supplied:—

Simpson and Lynam	£3,633 0 0
Wright and Scoffield	3,622 0 0
Dennett	3,498 0 0
Willmott	3,405 0 0
Ferguson and Allen	3,225 0 0
Rooke and Clarke (accepted)	3,150 0 0

For Stockton baths and washhouses, building department. Messrs. Oliver and Lamb, architects, Newcastle-on-Tyne. Quantities supplied:—

Jones, Barnard Castle	£2,179 0 0
Clarke, Sunderland	1,953 10 8½
Frowsdale, Stockton	1,676 0 0
Bulmer, Darlington	1,652 0 0
Moore and Graham, Redcar	1,626 8 0
Pratt, South Stockton	1,626 0 0
Fletcher, Stockton	1,623 0 0
Elgee, Stockton	1,616 0 0
Wilkinson, Stockton	1,549 0 0
Crosby, Norton	1,523 18 9
Bell and Jeckels, Stockton	1,511 0 0
Mothersdale, West Hartlepool	1,506 5 0
Russell, West Hartlepool	1,503 0 4
Wright, West Hartlepool	1,478 2 8
Horseman and Stockbill, West Hartlepool	1,453 10 0
Suggitt, West Hartlepool	1,392 14 0
Bowron, Stockton (accepted)	1,340 0 0
Wade, Stockton	1,320 0 6

For building new police offices, and for the restoration of the stone front of the Judges' lodgings, sent in to the Leicester county magistrates. Messrs. Dain and Smith, architects, Leicester:—

Broadbent (Leicester)	£2,410 0 0
Porter (Leicester)	2,174 0 0
Neale (Leicester)	2,119 0 0
Osborne (Leicester)	2,115 0 0
Herbert and Son (Leicester)	2,097 0 0
Lindley and Firn (Leicester) (accepted)	2,083 0 0

For the erection of a range of stables in Regent-street, Westminster; and three cottages in Douglas-gardens. Mr. James Howell, architect:—

Piper and Son	£2,047 0 0
Trollope and Son	1,986 0 0
King and Son	1,851 0 0
Mills and Son	1,828 3 3
Wardle and Baker	1,782 0 0
Greig	1,777 0 0
Bowley, Brothers	1,750 0 0

For erecting four houses in Brecknock-street, Camden-town. Mr. C. G. Searle, architect:—

Richardson	£2,140 0 0
Blanchard	2,077 0 0
Pritchard and Sons	1,979 0 0
Higgs	1,850 0 0
Turner and Sons	1,849 0 0
Ennor	1,675 0 0
Brown and Hewlett	1,650 0 0

For the erection of a Baptist Chapel, schools, and two houses. Messrs. Morris and Son, architects. Quantities supplied:—

John Jeffrey	£1,830 0 0
Billson	1,724 0 0
Ennor	1,712 0 0
Hack and Son	1,700 0 0
Frow	1,677 0 0
Blackburn	1,659 0 0
Watts	1,650 0 0
Ring and Stanger	1,619 0 0
Sheffield	1,490 0 0
Salt	1,450 0 0

For residence of the Manager of the West Ham Gas Works. Mr. D. A. Cobbett, architect. Quantities by Mr. Meakin:—

Piper	£1,525 0 0
Munday	1,446 0 0
Hack and Son	1,425 0 0
Rivet	1,397 0 0
Hedges	1,388 0 0
Morter	1,373 0 0

For Barnwell Abbey National Schools and teacher's residence, Cambridge. Mr. R. Reynolds Rowe, architect. Quantities not furnished:—

Bell and Sons	£1,297 0 0
Quinsee and Attack	1,284 0 0
Canham	1,220 0 0
Thoday and Clayton	1,188 0 0
Gray and Son (accepted)	1,095 0 0

For additions to a residence for Mr. William Nixon, East Burnham-park, Bucks. Mr. John Barnett, architect. Quantities by Mr. Richard Roberts:—

Laurence and Son	£1,788 0 0
Piper and Son (accepted)	1,703 0 0

For the erection of a detached Mediæval house, for Mr. Wm. Midworth, Mansfield (foundations and cellars put in before the contract). Mr. R. Clarke, architect, Nottingham. Quantities supplied:—

Sills	£1,200 0 0
Frisby	1,155 0 0
Ferguson and Allen	1,029 0 0
Simpson and Lynam	990 0 0
Valance	987 0 0
Wright and Scoffield	973 0 0
Rooke and Clarke	957 0 0
Brooke (accepted)	827 0 0

For two semi-detached houses at Wandsworth-common, Surrey. Messrs. Gardner and Co. architects. Quantities not supplied:—

Keast and Moon	£750 0 0
Curnick	735 0 0
Thornton	685 0 0
Hersee	597 0 0
Westrope	595 10 0
Heather (accepted)	544 14 6

For addition to retort-house and coal-store at West Ham Gas Works, Essex. Quantities by the engineer:—

Piper	£754 0 0
Munday	690 0 0
Hack and Son	680 0 0
Rivet	663 0 0
Hedges	655 0 0
Morter (accepted)	640 0 0

For a house at Millwall, Poplar, for Messrs. Whiterow and Cochrane. Messrs. Morris and Son, architects:—

Jeffrey	£467 0 0
King	450 0 0
Billson	420 0 0
Salt	420 0 0
Ring and Stanger	413 0 0
Hack and Son	403 0 0
Watts	398 0 0
Sheffield	387 10 0

For alterations and additions to the Free Samaritan Hospital, Edward's-street, Portman-square. Mr. J. F. Bush, architect:—

Cheeseman	£434 12 0
Keyes and Head	427 0 0
Longmire and Burge	399 0 0
Patman and Co.	350 0 0
W. Hyde	323 17 0

For building a tank for a new gas-holder, at the Ventnor Gas Works, Isle of Wight. Mr. Geo. Garnett, C.E.:—

Bull	£143 10 0
Wheeler	140 0 0
Bevis and Son (accepted)	135 0 0

For alterations and repairs at 189, Union-street, Southwark. Messrs. Herbert Williams and Bright Smith, architects:—

Downes	£236 0 0
Chessbum	181 0 0
Turner and Sons	177 0 0

For works on the Bridgewater Estate. Mr. Edward Browning, architect, Stamford:—

	Thomas Gadsden's Farmstead, Nettleden.	Thomas Gadsden's House, Nettleden.	George Pratt's Homestead, Berkhampstead-common.	Agent's House, Little Gadsden.	Estate Offices, Little Gadsden.
	£. s.	£. s.	£. s.	£. s.	£.
H. Bradshaw..	3,820 0	..	1,360 0	4,775 0	1,950
W. Walker ..	4,123 0	1,553 0	1,997 0	4,093 0	1,052
Jarvis and Co.	3,817 0	..	1,633 0	5,023 0	2,028
J. Wilson	3,863 0	..	1,486 0	4,666 19	1,826
G. Cooper....	3,623 19	2,484 17	1,468 10	3,775 15	
Nash and Matthews.....	3,815 0	..	1,408 0		
Hardy	3,119 11	..	1,148 11		
Lawson & Joy	2,987 0	..	1,418 0		
Harris	..	..	1,250 0		
Watson.....	..	..	1,549 0		
Smith.....	3,296 0				
Orchard.....	2,849 0				

TO CORRESPONDENTS.

R. C.—Messrs. M.—S. B. G.—A Constant Reader.—Mr. O.—J. B. L.—W. Mc. F.—I. H.—C. M. A. (we have no further information).—S. E. M.—A. B.—"Thoughts among the Statues" (shall appear).—C. C. (the answer would depend on one or two points unstated. Under ordinary circumstances B. would be the party liable).—R. M. (declined with thanks)—R. R. B. (ditto).—H. W. (our list came from the architects: the correction should also come from them).—P. M. H.—K. and H.—C. and Co.

"BOOKS AND ADDRESSES."—We are forced to decline pointing out books or finding addresses.

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AGENCIES.—PLUMBERS, &c.—An Agent for each of the London Postal Districts will be appointed for WRIGHT'S PATENT SELF-ACTING WATER-CLOSET. This apparatus, the completest invented, may be seen, and particulars had, at the Office of Mr. FRASER, 47A, Moorgate-street, E.C.

TO ARCHITECTS, BUILDERS, &c.

A MIDDLE-AGED MAN (a Carpenter by trade) WANTS an ENGAGEMENT as CLERK of WORKS, or BUILDER'S FOREMAN. Accustomed to the charge of jobs for one of the most respectable and extensive firms in Pimlico for several years, pay wages, measure and keep accounts, both in town and country. Can make out working drawings, &c.; understands the practical details of builders' work. The best of references, and character for integrity and capacity. No objection to the country (Ireland preferred).—Address, T. M. Belgrave Coffee-house, Shaftesbury-terrace, Pimlico, S.W.

COMMISSION WANTED.—A Firm in the North of England, who sends out a Traveller in the Marble Chimney-piece Trade, could undertake a COMMISSION for goods used by Ironmongers or Builders. The Stove Grate trade would be preferred. Security can be given.—Address J. N. Office of "The Builder."

TO SMALL BUILDERS AND OTHERS.

EMPLOYMENT WANTED, by a respectable Man of sober, steady, and persevering habits, as ASSISTANT, or to take charge of a Small Business (no objection to the country), who has a thorough practical knowledge of the building trade from many years' experience. Can keep accounts, measure up work, take out quantities, assist in making plans, and superintend workmen, &c. Unexceptionable references and testimonials. Salary moderate for the first year; to be advanced as services are appreciated. The Advertiser would be found of value to a young builder commencing business; or is in every respect qualified to superintend building works on a gentleman's estate.—Address, W. W. F. S, Old North-street, Red Lion-square, Holborn.

FOREMAN'S WAGES SAVED.—CARPENTERS' WORK and BRICKWORK WANTED, by an Experienced Practical Builder, at per load and rod, or by the piece. Two-thirds to be advanced during progress, the balance on completion.—Address, T. A. Messrs. Noakes and Co. Timber-merchants, Old Saint Pancras-road.

HANDY MAN.—WANTED, a respectable WORKMAN, who can paint, whitewash, stop, and prepare for the paper-hanger. One that can hang paper preferred. Wages, 1l. per week, with board and lodging.—Apply at 302, Strand.

TO ARCHITECTS AND SURVEYORS.

REQUIRED, a RE-ENGAGEMENT, by a quick and correct DRAUGHTSMAN, who has had some of the best practice in the Pointed styles, general office work, and surveys, repairs, details, finished and working drawings, and perspective; and is, with high references, late from an eminent office.—Address, NEMO, Office of "The Builder."

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THE Advertiser, aged 25, having lately completed an engagement with a Surveyor to one of the Metropolitan Boards of Works, requires EMPLOYMENT, can Design, Draw Perspective, Take out Quantities, Measure up Work, &c. &c.—Terms 30s. per week (London only).—Address, D. 37, New Gloucester-street, Hoxton, N.

TO ARCHITECTS, &c.

THE Advertiser, accustomed to the general work of an office, also to perspective and tinting, desires an ENGAGEMENT. First-class references and specimens as to ability, &c.—Address W. B. HUE, 26, Newland-street, Pimlico.

TO ARCHITECTS, SURVEYORS, AND LAND-SURVEYORS.

WANTED, an ENGAGEMENT, to prepare DESIGNS, &c. and specifications; or to take out quantities; or in surveys of land, dilapidations, c. Terms, with an architect, Two Guineas weekly.—Address, S. Messrs. BEVINGTON and TOPHAM, 32, King William-street, City, E.C.

TO TIMBER-MERCHANTS, BUILDERS, ENGINEERS, &c.

WANTED, by a Young Man of practical abilities, accustomed to the superintendence of workmen, a SITUATION as Clerk, Foreman, Timekeeper, or in other useful capacity of trust. Understands measuring, and is quick at accounts. Good reference. Salary moderate.—Address, A. K. B. 59, Rufford's-row, High-street, Islington, N.

WANTED, by a Young Man, who has been upwards of four years engaged with a Civil Engineer and Architect, a SITUATION. He has good testimonials from his late employer. Salary not so much an object as employment of time.—Address, D. D. Mr. Dare's, 88, Piccadilly, London.

TO BUILDERS AND PAINTERS.

WANTED, by the Advertiser, aged 28, a PERMANENT ENGAGEMENT as THREE-BRANCH HAND. Good references can be given.—Address, L. A. L. 20, Model-buildings, Streatham-street, Bloomsbury, W.C.

TO MASTER SMITHS, GAS ENGINEERS, AND OTHERS.

WANTED, a SITUATION as FOREMAN or LEADING MAN; aged 30 years, thoroughly understands all the branches of Smithing, Gas-fitting, Bell-hanging, and Hot Water Work. No objection to go abroad.—Apply, G. C. 10, Featherstone-buildings, Holborn, London.

TO GAS ENGINEERS.

WANTED, by the Folkestone Gas and Coke Company, an experienced man as MANAGER. He will be required to have a good practical knowledge of gas engineering in all its branches, and to take the register of all metres, and must be able to give unexceptionable references as to character and capabilities. A residence will be provided on the works.—Apply to Mr. JOSH. GARDNER, Gas Works, Folkestone.

May 26, 1858.

TO ARCHITECTS AND SURVEYORS.

WANTED, immediately, an ASSISTANT, fully competent to undertake the entire management of a country practice, including designing, preparing working and detail drawings, specifications, and estimates, perspective, &c.; and must be a good surveyor, mapper, and leveller.—Apply by letter, stating salary required and experience, and accompanied by the name and address of a reference, to GEORGE FELTON, Architect, Land Surveyor, and Auctioneer, Penrhyn, near Conway, North Wales.

WANTED, in a BUILDER'S OFFICE, a JUNIOR CLERK.—Apply by letter, stating qualifications, salary required, and other particulars, to Mr. SIMPSON, 30, Baker-street, Portman-square.

TO MINERS AND EXCAVATORS.

WANTED, a WORKING FOREMAN, near London; one that has been accustomed to tunnelling and timbering. State age, and salary he has received, also the works he has superintended the execution of, and whom employed for.—Address, by letter only, to J. Y. 11, Hampstead-road.

N.B.—None need apply whose character will not bear the strictest investigation. Testimonials will not be attended to. A good salary will be given.

TO ARCHITECTS AND BUILDERS.

WANTED, a SITUATION as CLERK of WORKS, or GENERAL FOREMAN, by a thoroughly competent Person, age 35. First-rate testimonials. The country preferred.—Address, M. A. T. Office of "The Builder."

TO BUILDERS.

WANTED, a Situation as SHOP OUT-DOOR FOREMAN or STAIRCASE HAND; good reference can be given.—Address A. M. 5, Field-street, Bagnigge-wells-road, King's-cross, W.C.

WANTED, by a respectable Young Man, aged 22 years, EMPLOYMENT as a PAINTER and GLAZIER, and can turn his hand to PLUMBING; is in general a good Distemperer, well able to make himself generally useful, and handy in anything required, principally at jobbing. Wages no object.—Address, H. H. at Mr. Grineau's, 33, Paddington-street, Manchester-square, Marylebone.

TO BUILDERS AND PLUMBERS

WANTED, by a steady and experienced PLUMBER, aged 38, a SITUATION, in town or country; understands deep well, pump, and bath work in every department; can fill up time at painting and glazing, and hot-water work. Good reference.—Address, G. S. 13, East-street, Kennington-road, Lambeth.

WANTED, a respectable Young Man, from 18 to 20 years of age, as JUNIOR CLERK in a Builder's Office, who can write a good hand. One who has been in a similar situation preferred.—Apply by letter stating age and references, &c. &c. in own handwriting to W. C. Hornsey Cottage, Hornsey-road, Holloway, N.

TO PLUMBERS, GLAZIERS, AND GAS-FITTERS.

WANTED, a SITUATION, by an experienced Man, in the above branches, who is well acquainted with LEAD LAYING. Good reference.—Apply to B. 3, Charlotte-terrace, Lilford-street, Camberwell.

TO PLUMBERS, BUILDERS, &c.

WANTED, EMPLOYMENT, by an experienced PLUMBER and GAS-FITTER, in all its branches. Good reference from last employer. Town or country.—Address, B. P. Office of "The Builder."

TO CONTRACTORS AND BUILDERS.

WANTED, by an experienced, active Man, a SITUATION, as GENERAL FOREMAN or AGENT. Accustomed to extensive constructions, both architectural and engineering.—Address, W. A. 20, Nichols-square, Hackney-road, London.

TO MASTER BUILDERS AND OTHERS.

WANTED, by a Young Man, a permanent ENGAGEMENT, in PAINTING, &c. He can make himself very useful in graining. &c.—Address, X. Q. Z. No. 1, Canterbury-terrace, Ball's-pond-road, N.

TO PLUMBERS, BUILDERS, &c.

WANTED, by a respectable Man, aged 30, who thoroughly understands his business, a constant SITUATION, as PLUMBER, or PLUMBER, PAINTER, and GLAZIER. Good references as to character and ability, if required. No objection to town or country.—Address, A. A. A. Office of "The Builder."

TO BUILDERS.

WANTED, by an energetic Man, aged 32, and an experienced Carpenter and Joiner, a SITUATION as WORKING FOREMAN, or constant employment at the bench. Can prepare working drawings, and take charge of work, and is a first-class workman. Town preferred. Good reference.—Address, F. O. R. 6, King Henry's-walk, Ball's-pond, Islington.

TO ARCHITECTS AND SURVEYORS.

WANTED, by a good Draughtsman, versed in Classic and Mediæval art, and qualified in the practical department of his profession, an ENGAGEMENT as OFFICE ASSISTANT, SURVEYOR, or CLERK of WORKS.—S. T. Office of "The Builder."

TO PLUMBERS.

WANTED, by a Young Man, aged 20, a CONSTANT SITUATION as THREE-BRANCH HAND. Wages 24s. per week.—Address, post paid, to R. K. 20, Cirencester-place, Fitzroy-square, W.C.

TO BUILDERS, PLUMBERS, &c.

WANTED, EMPLOYMENT, by a thorough practical PLUMBER, in the Country, where a steady, experienced man is required; is well experienced in Gas Fitting and Glazing.—Address, W. C. No. 12, Sussex-place, Reading, Berks.

WANTED, by a Youth, aged 17, who understands Land Measuring, Mensuration, and is a good Draughtsman and Mathematician, a SITUATION as JUNIOR CLERK in an Architect's, Builder's, or Surveyor's Office. Unexceptional references both as to character and qualifications can be given.—Address, A. W. X. Post-office, Ponder's End, Middlesex.

TO BUILDERS AND OTHERS.

WANTED, by a very respectable Young Man, aged 20, a RE-ENGAGEMENT as JUNIOR CLERK. Writes a good hand, and is conversant with builders' accounts, &c. High and ample references can be given, and security, if required. No objection to the country.—Address, H. 9, High-street, Notting-hill, London.

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